



FIG. 1A

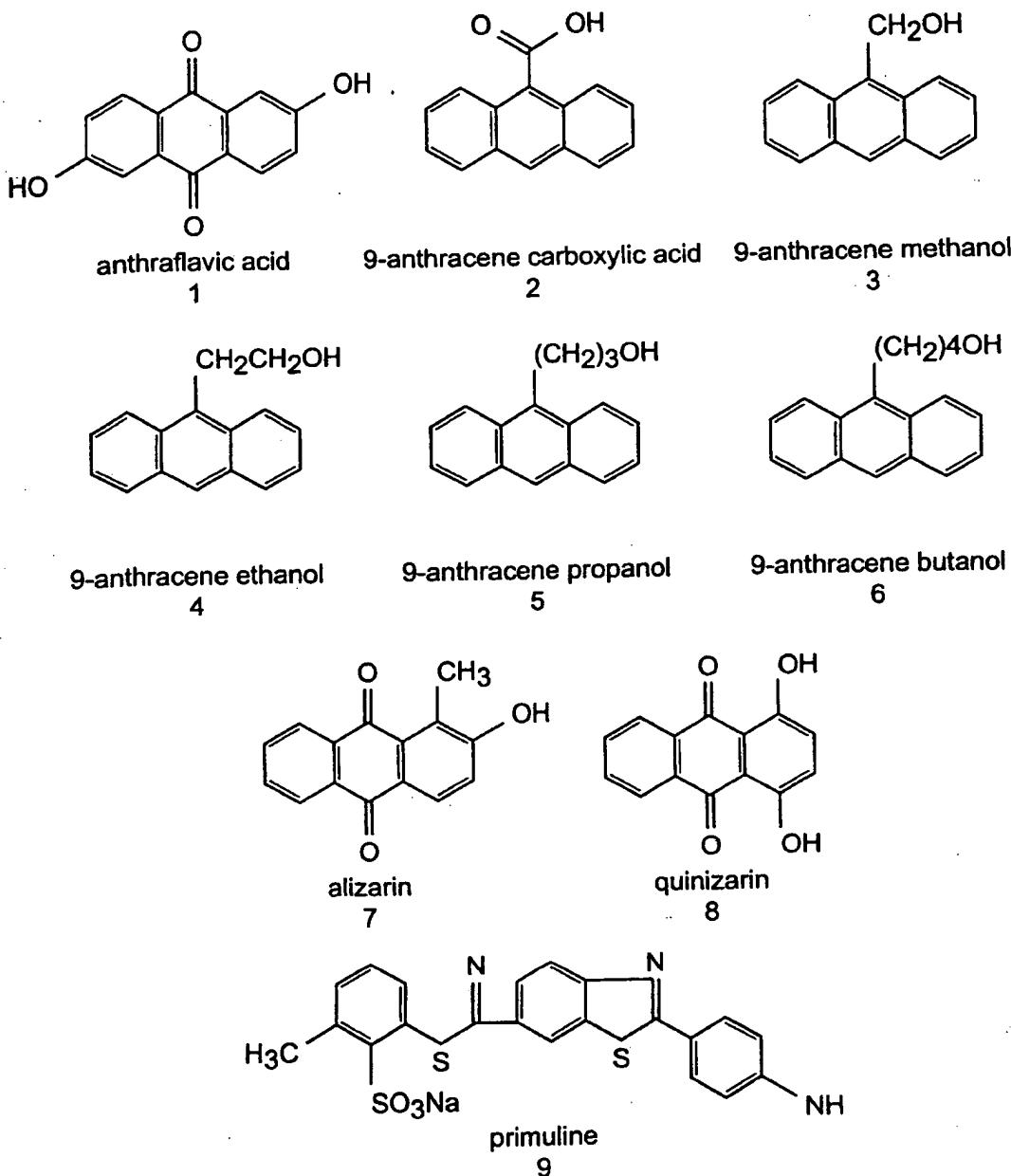
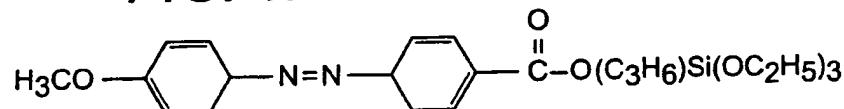


FIG. 1F



4-methoxyphenylazobenzene-4-carboxy
propyl triethoxysilane

FIG. 1B

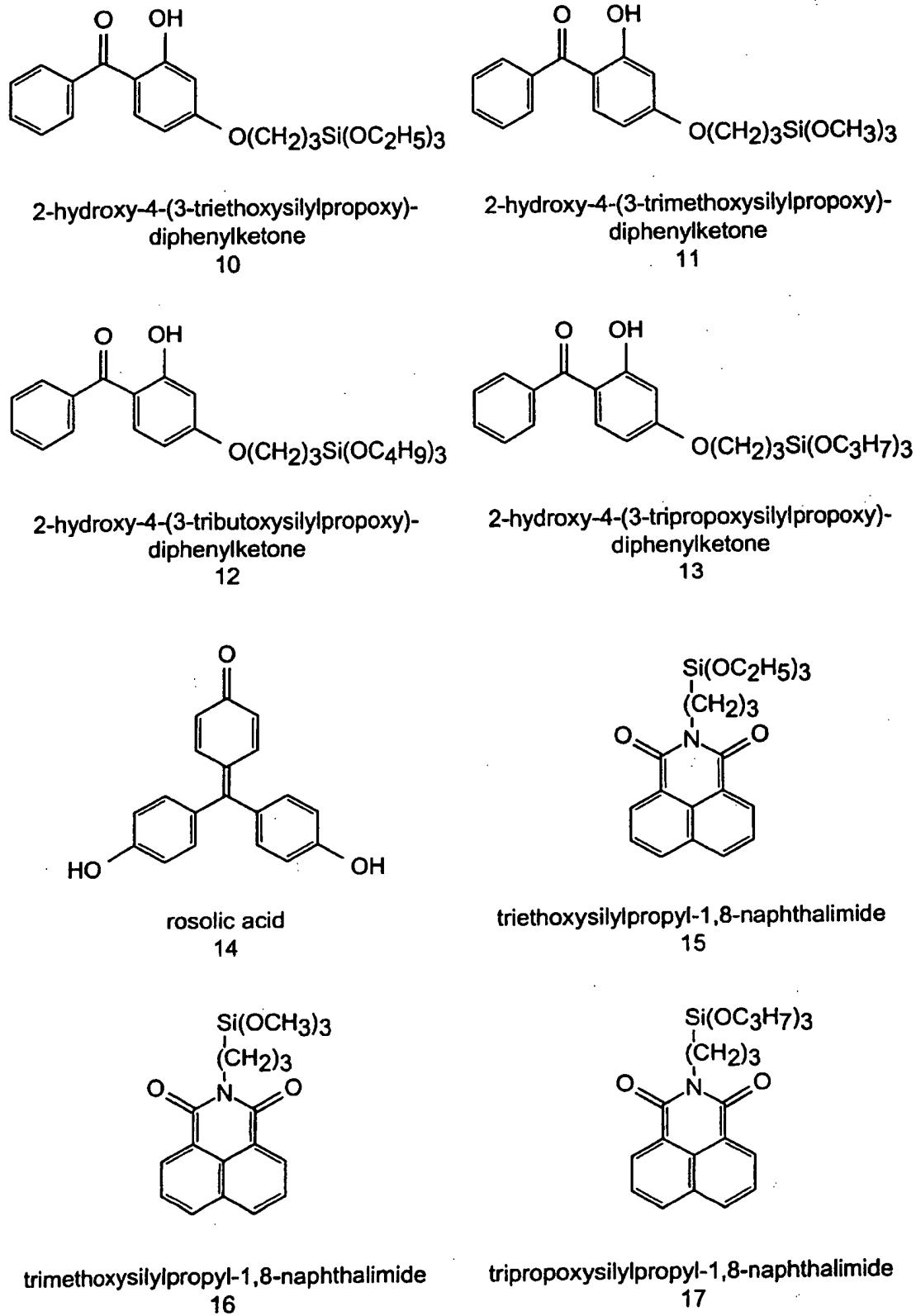


FIG. 1C

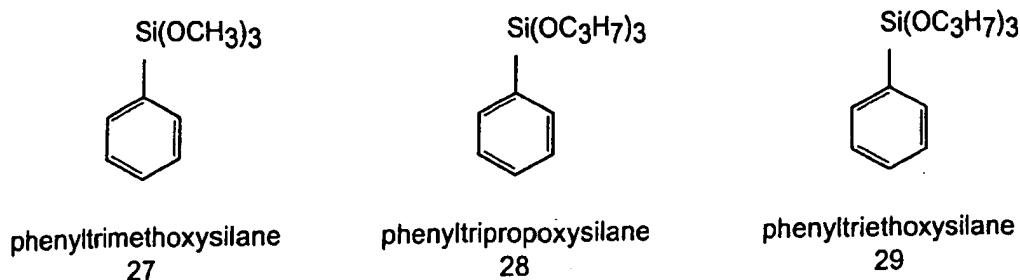
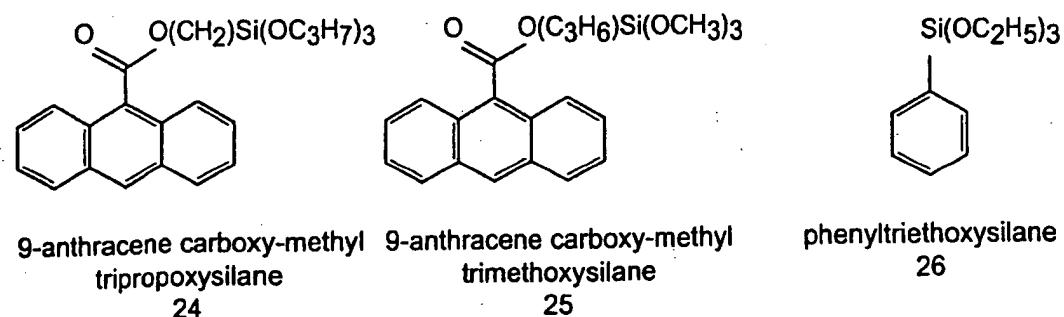
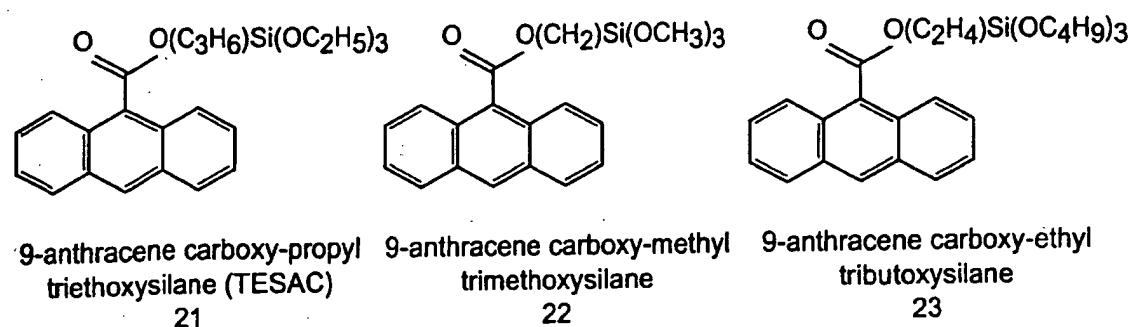
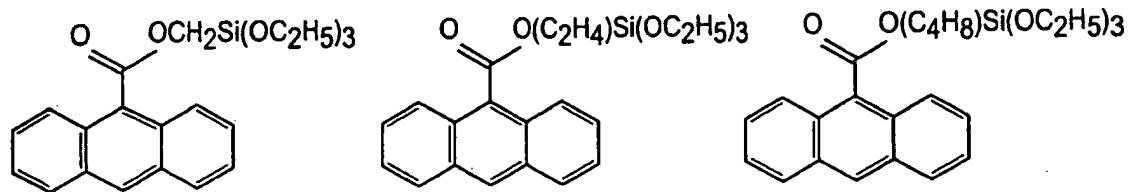
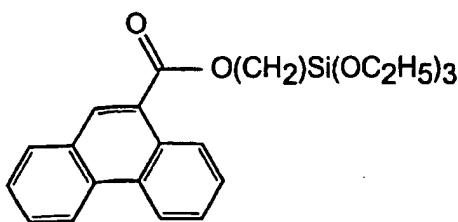
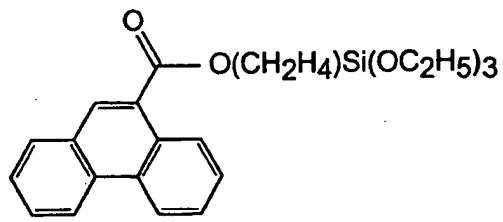


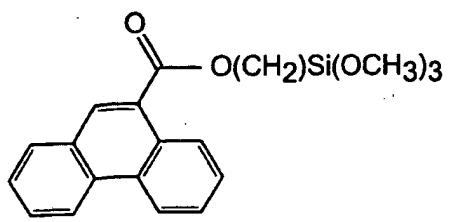
FIG. 1D



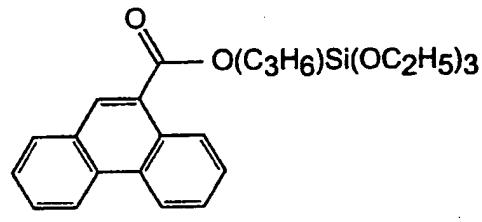
10-phenanthrene carboxy-methyl
triethoxysilane
29



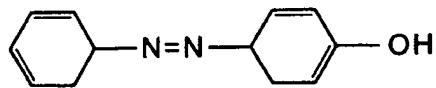
10-phenanthrene carboxy-ethyl
triethoxysilane
30



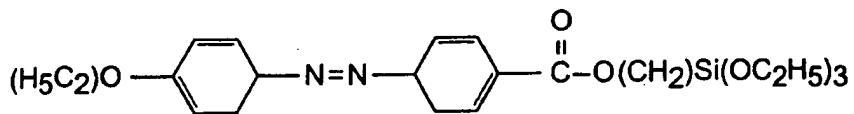
10-phenanthrene carboxy-methyl
trimethoxysilane
31



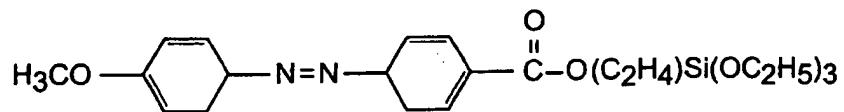
10-phenanthrene carboxy-propyl
triethoxysilane
32



4-phenylazophenol
33

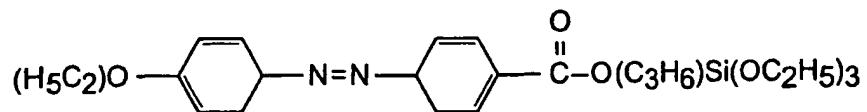


4-ethoxyphenylazobenzene-4-carboxy
methyl triethoxysilane
34

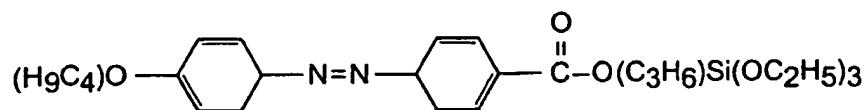


4-methoxyphenylazobenzene-4-carboxy
ethyl triethoxysilane
35

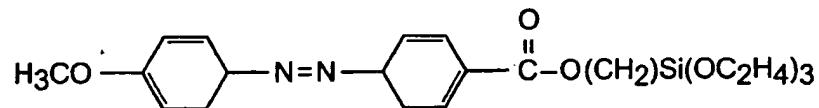
FIG. 1E



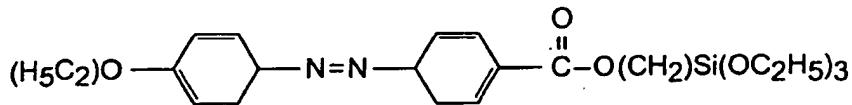
4-ethoxyphenylazobenzene-4-carboxy
propyl triethoxysilane
36



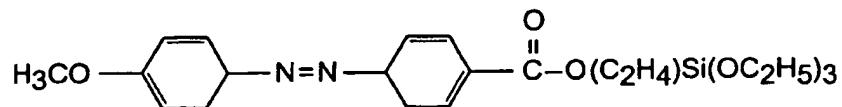
4-butoxyphenylazobenzene-4-carboxy
propyl triethoxysilane
37



4-methoxyphenylazobenzene-4-carboxy
methyl triethoxysilane
38



4-ethoxyphenylazobenzene-4-carboxy
methyl triethoxysilane
39



4-methoxyphenylazobenzene-4-carboxy
ethyl triethoxysilane
40

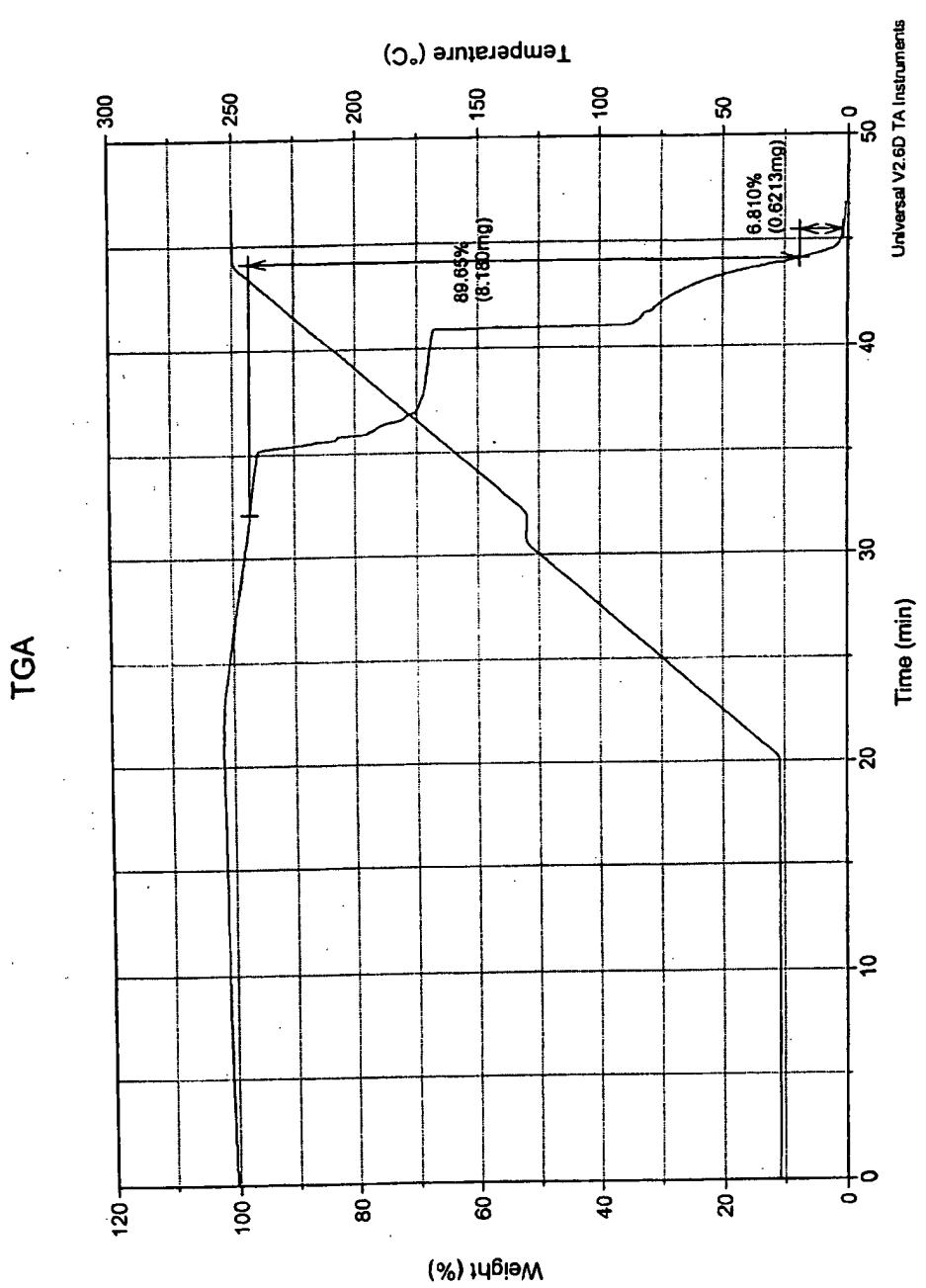


Figure 2

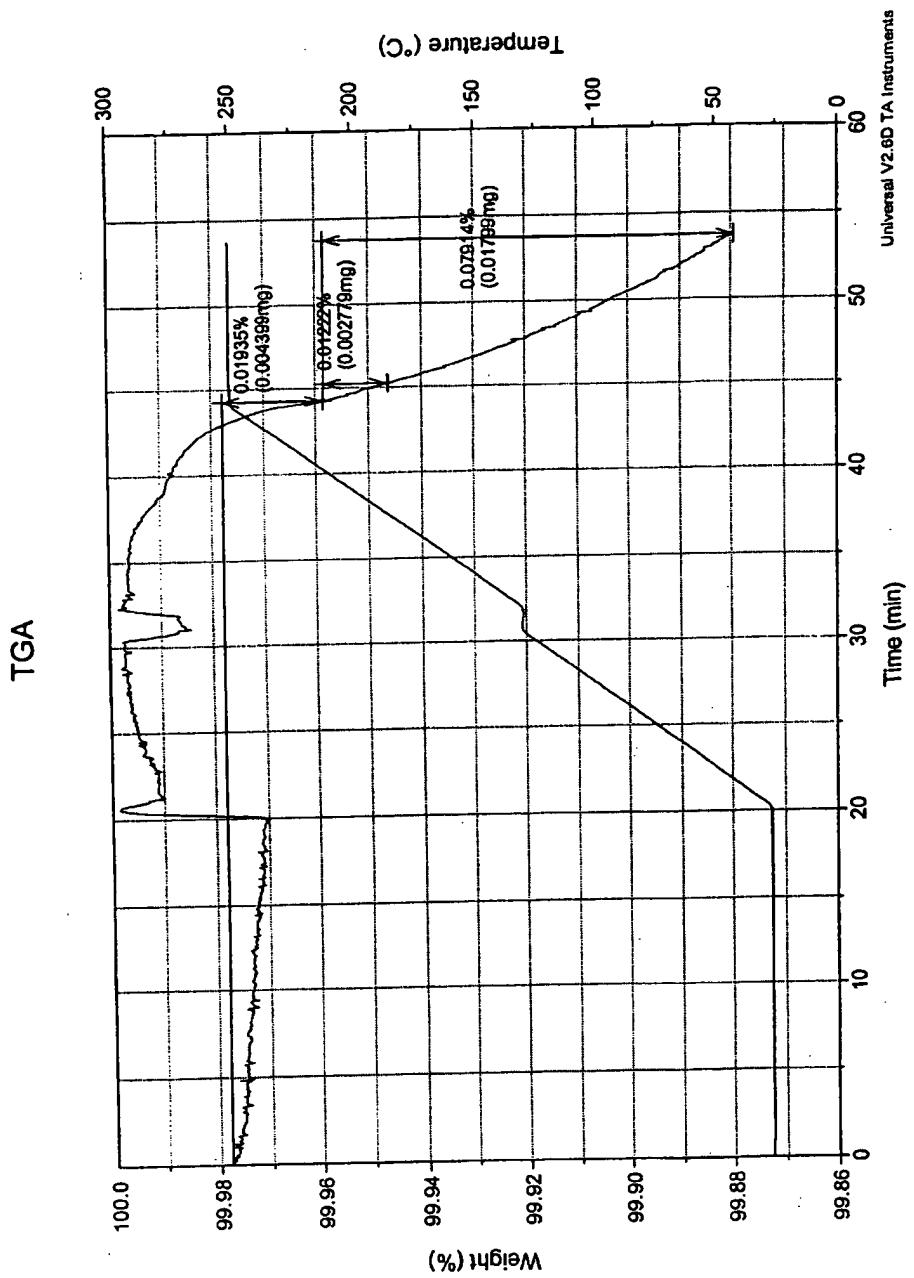


Figure 3

Figure 4

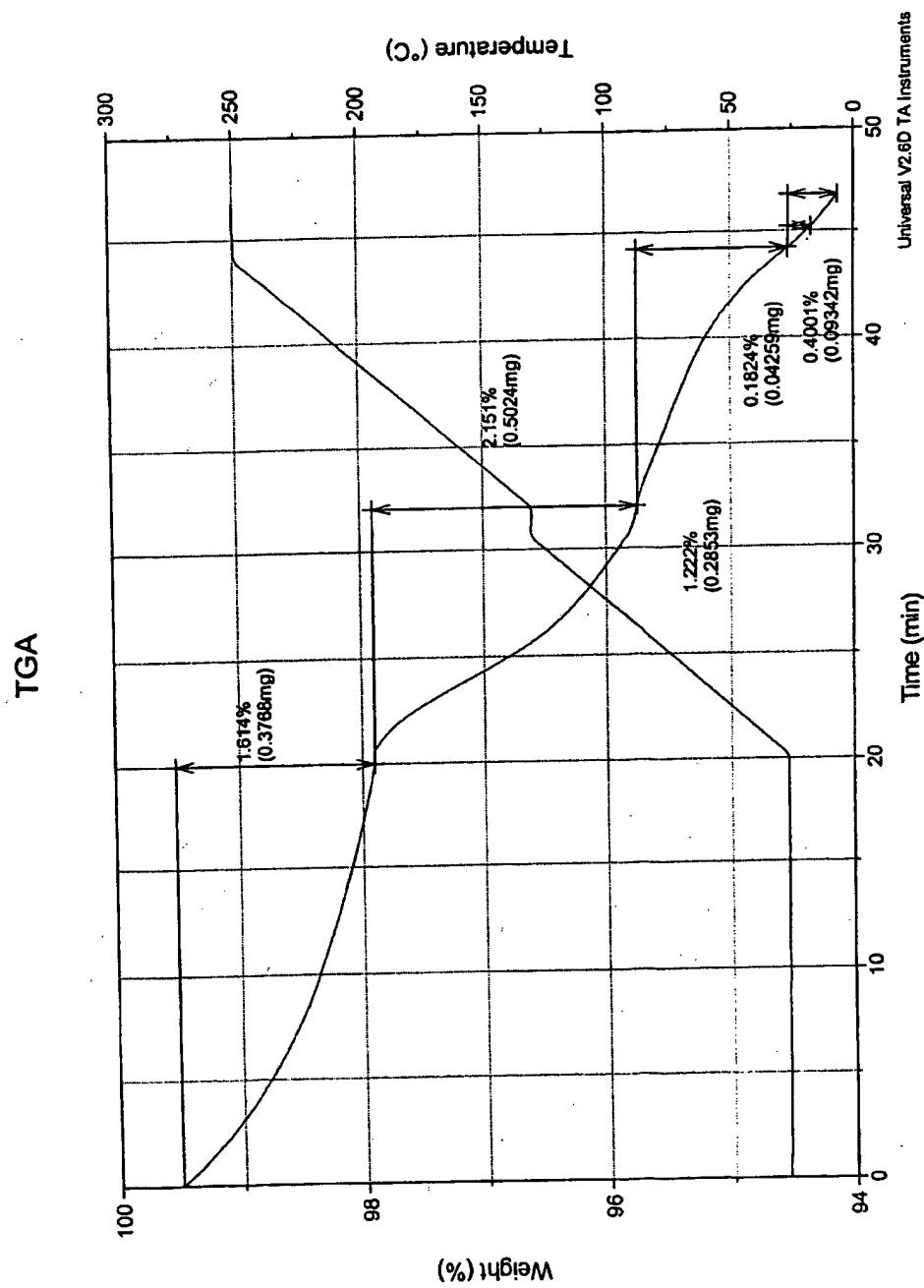


Figure 5

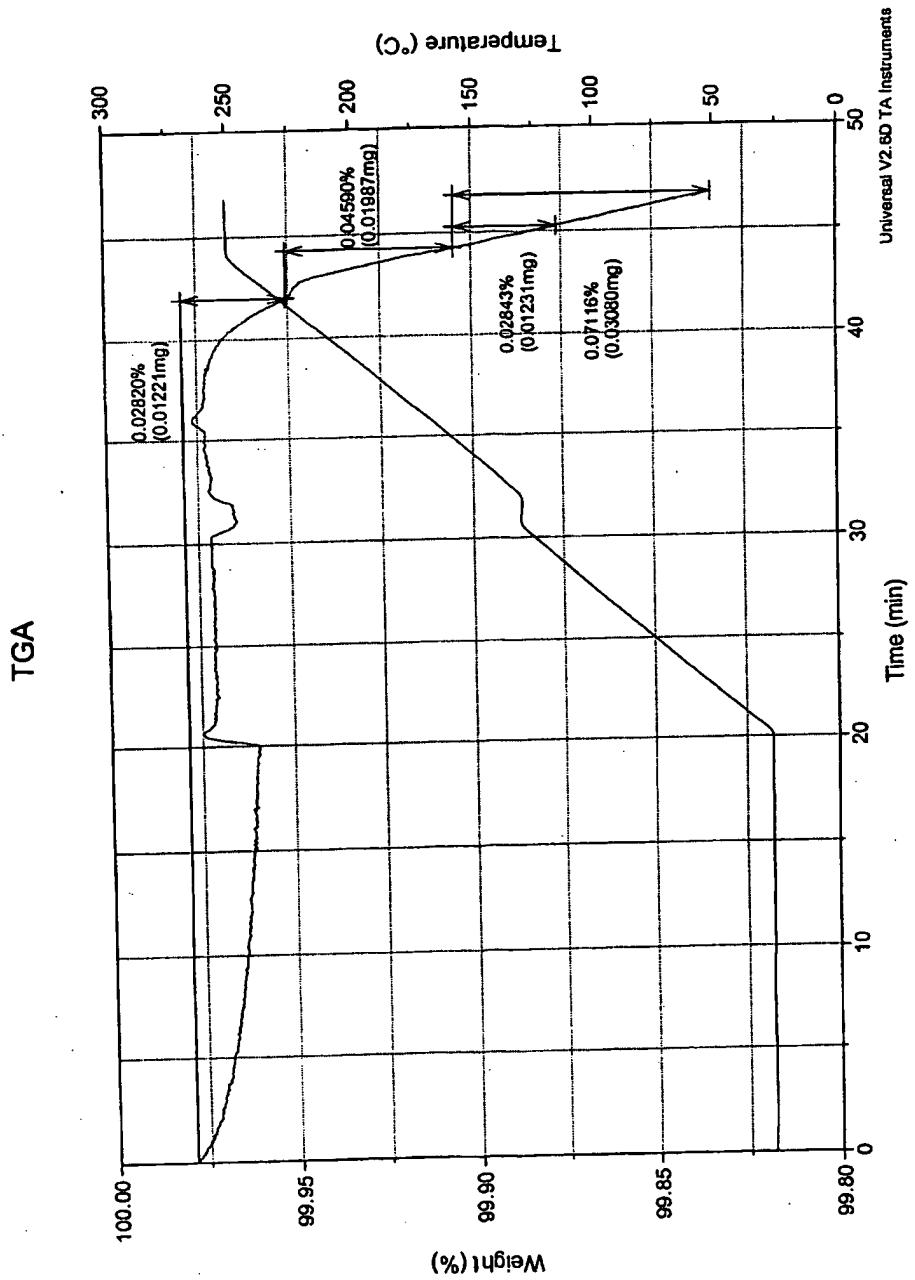


Figure 6

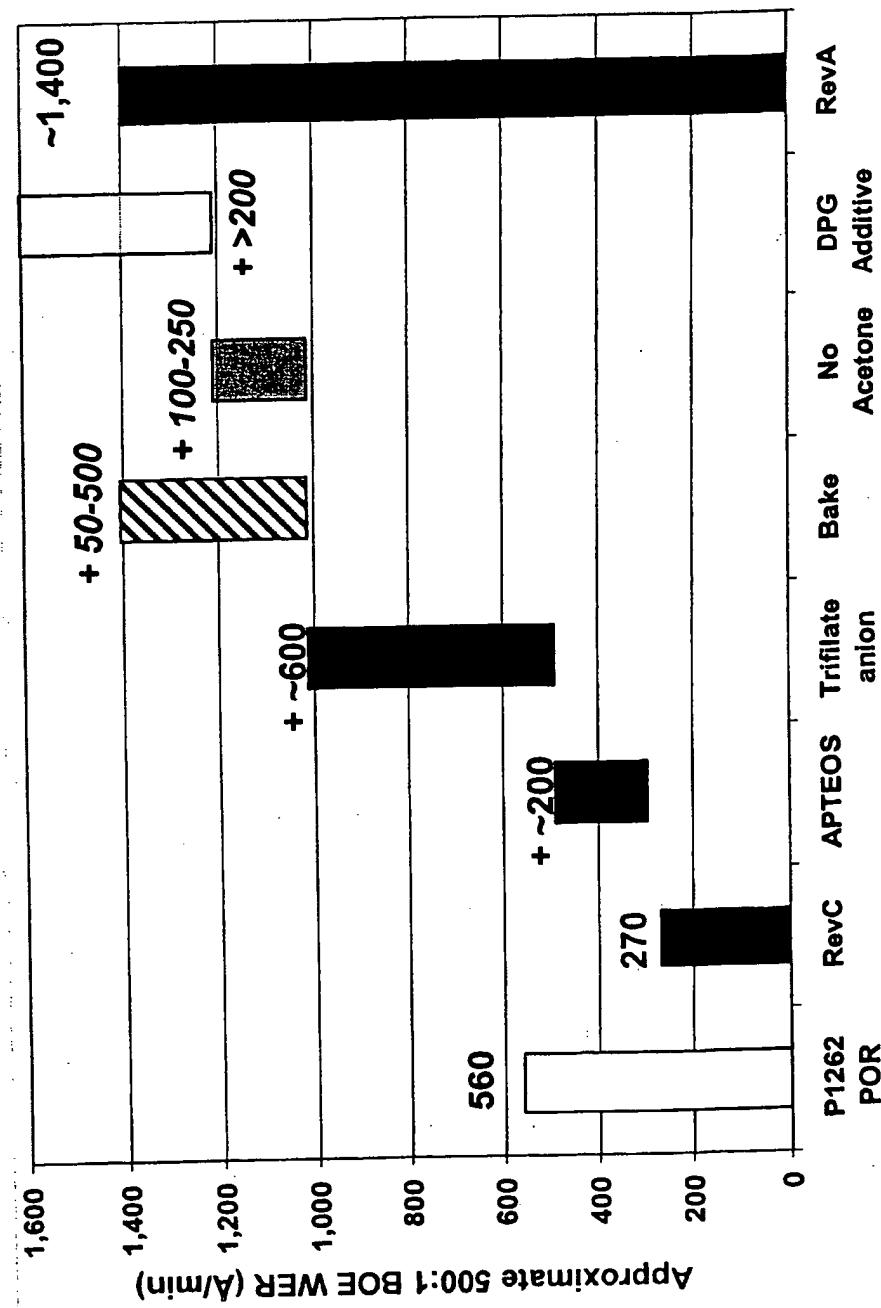


Figure 7

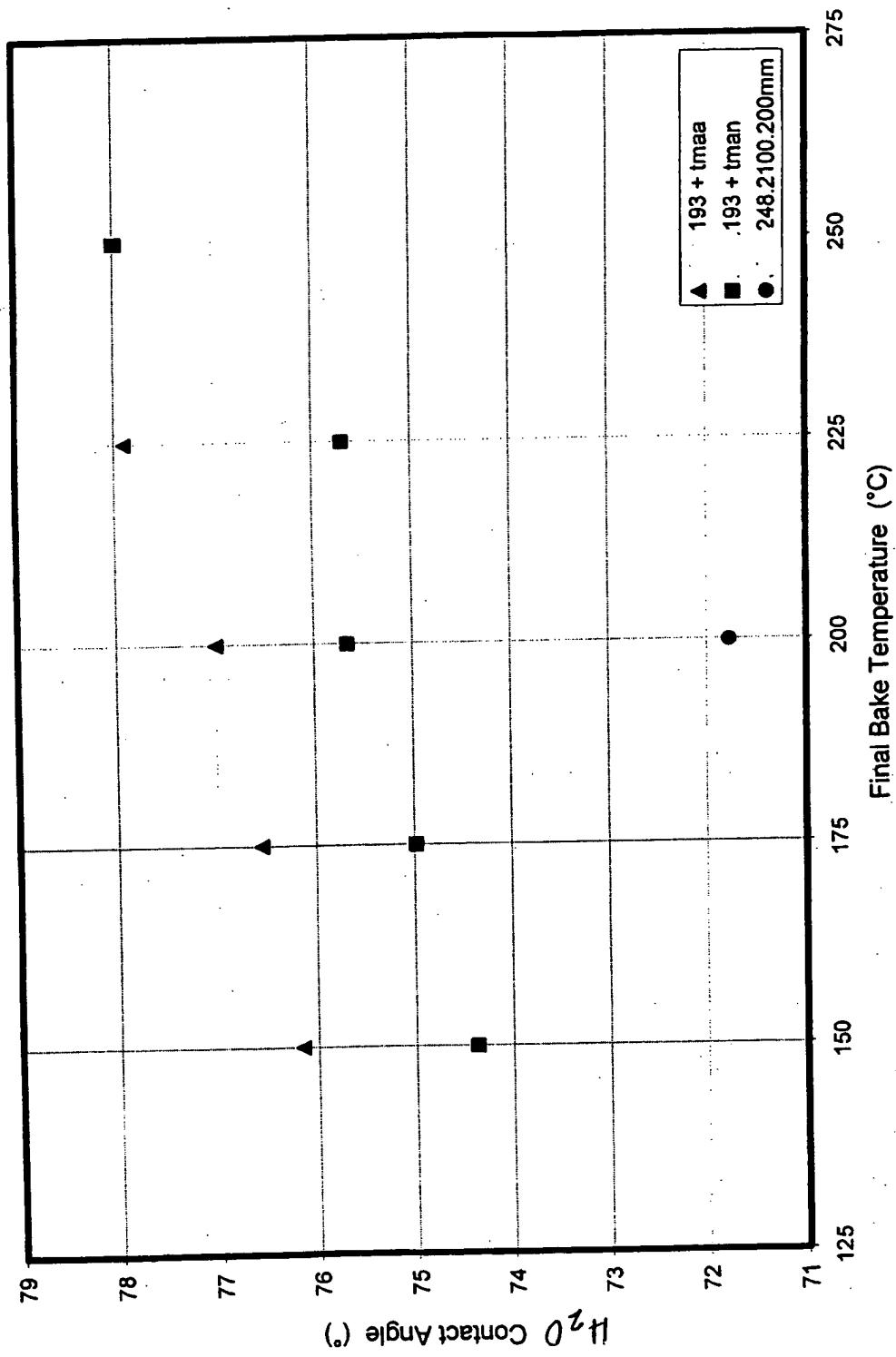
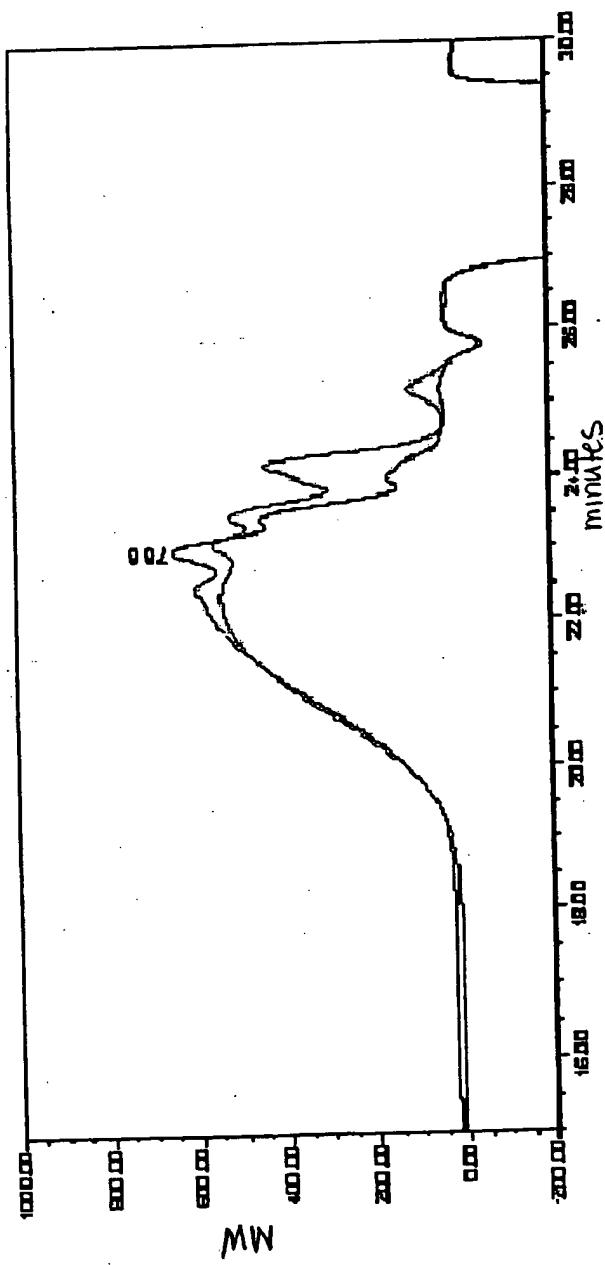


Figure 8



Product (Absor. b. Comp.)	Mn	Mw	Mp	Mz	Mz+1	Polydispersity
.193 + 600ppm Acidified TMAA	865	1183	737	1590	2012	1.367
w/ TMAA (after 5 days @ 40 C)	1021	1316	766	1671	2032	1.289
.193 + 600ppm TMAN	789	1151	727	1582	199	1.458
w/ TMAN (after 5 days @ 40 C)	848	1244	731	1706	2139	1.467

Figure 10

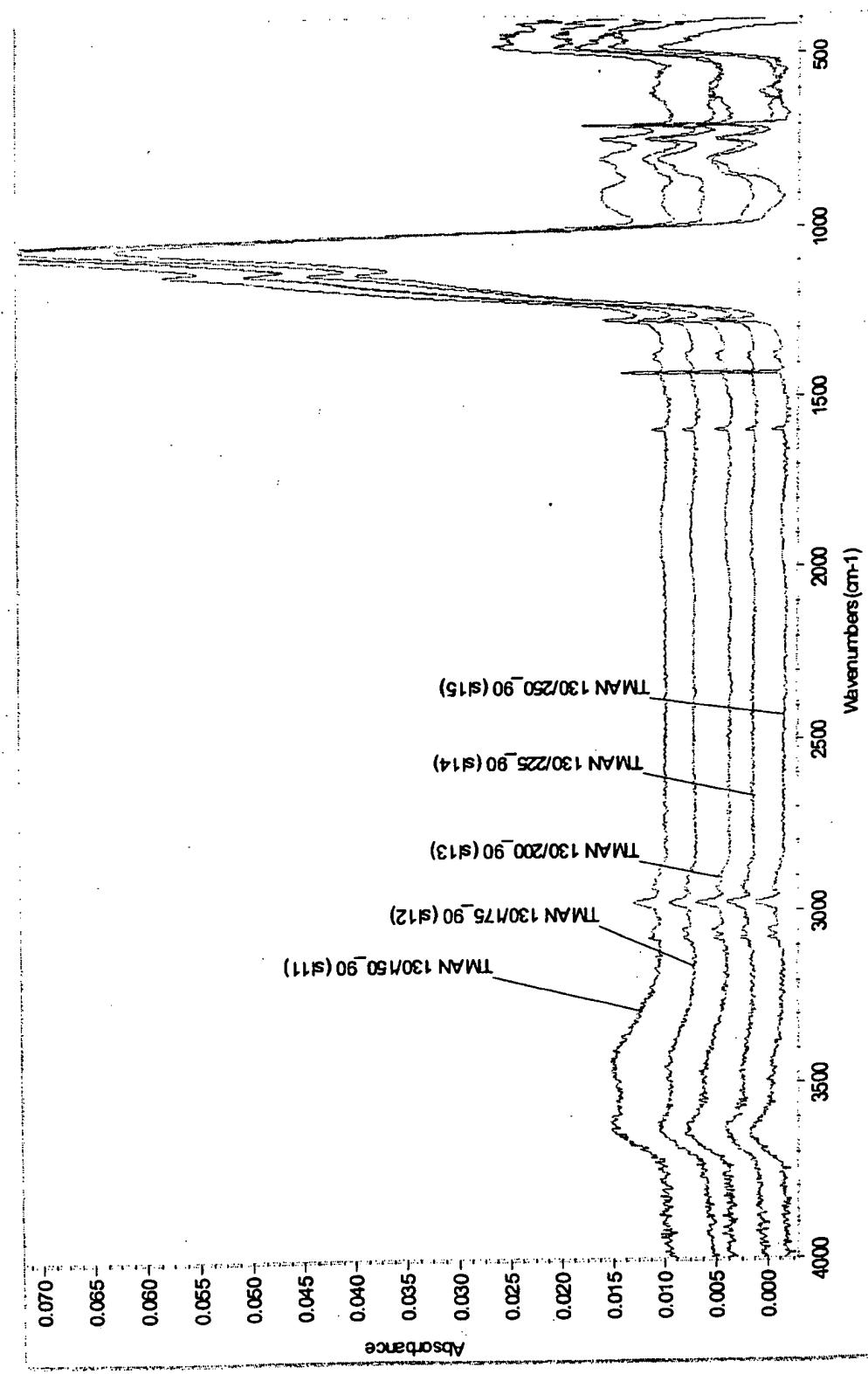


Figure 11

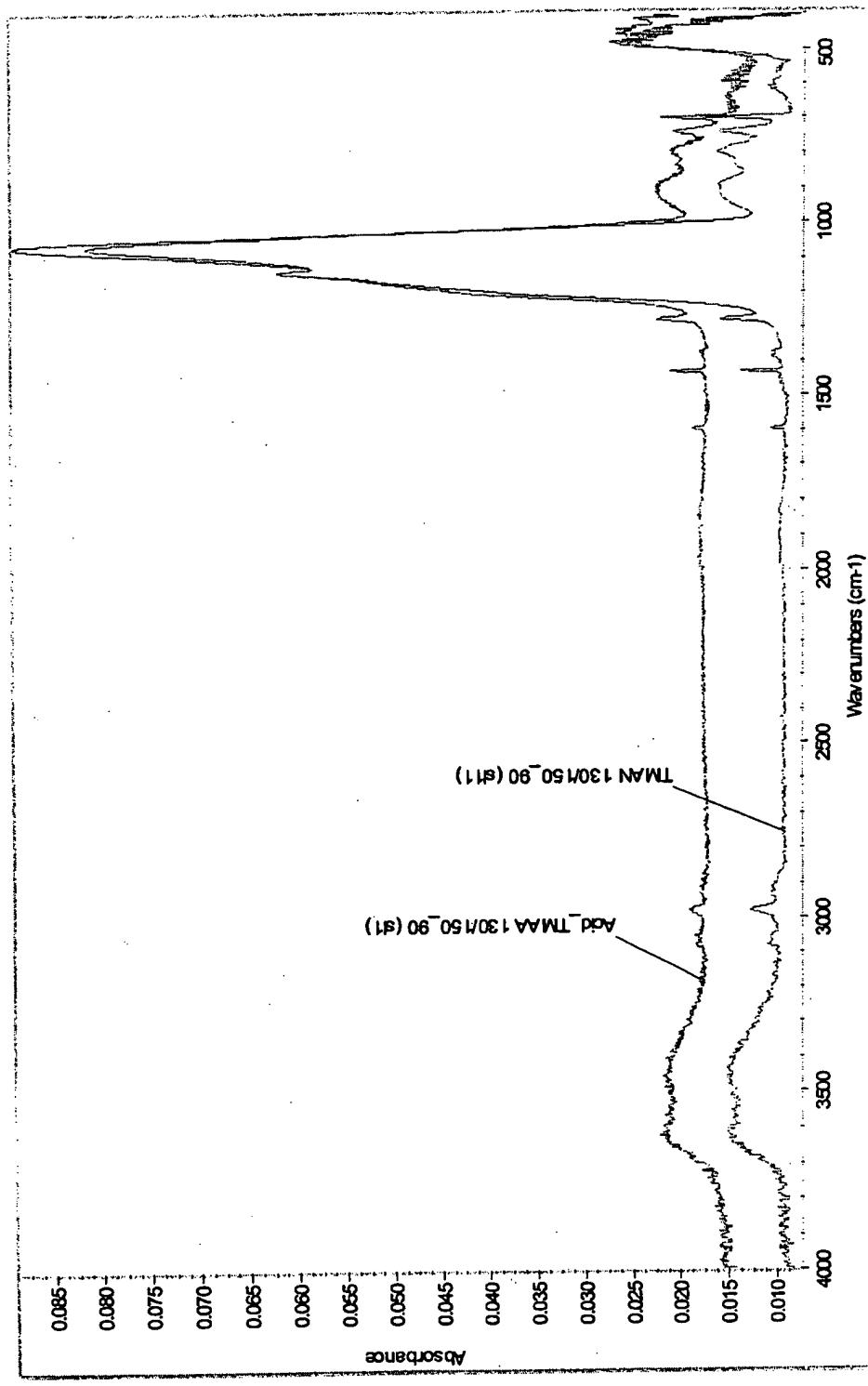


Figure 12

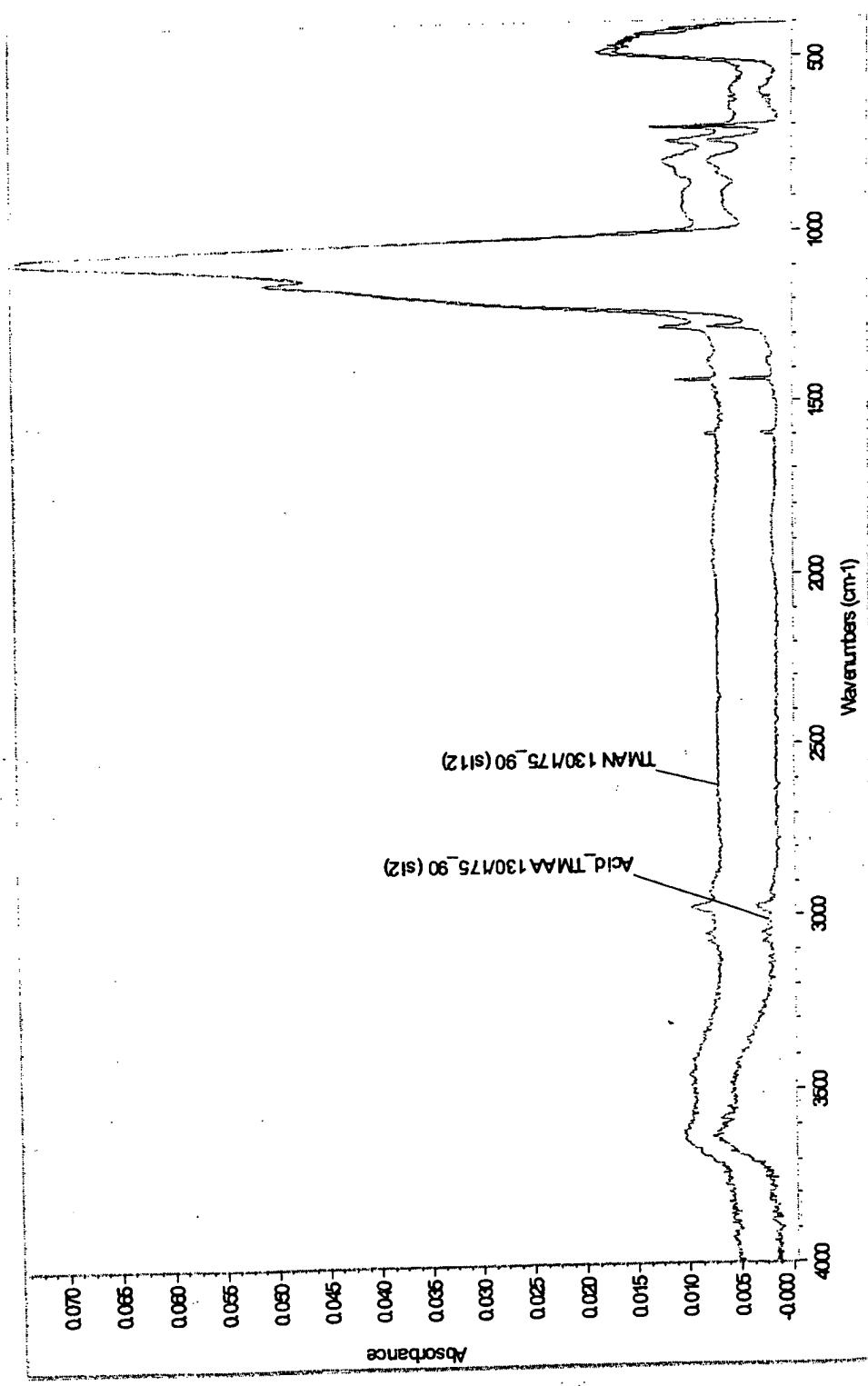


Figure 13

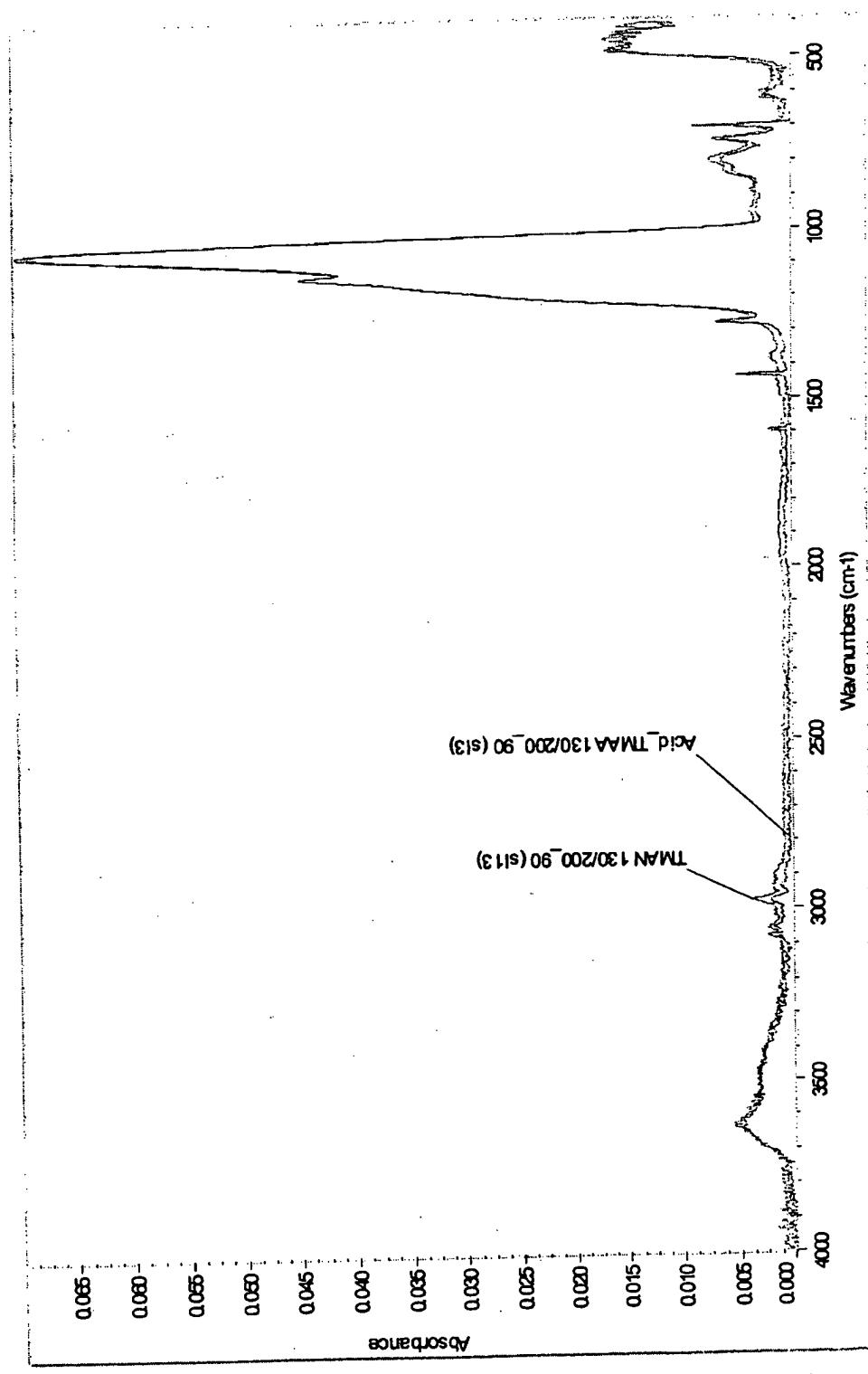


Figure 14

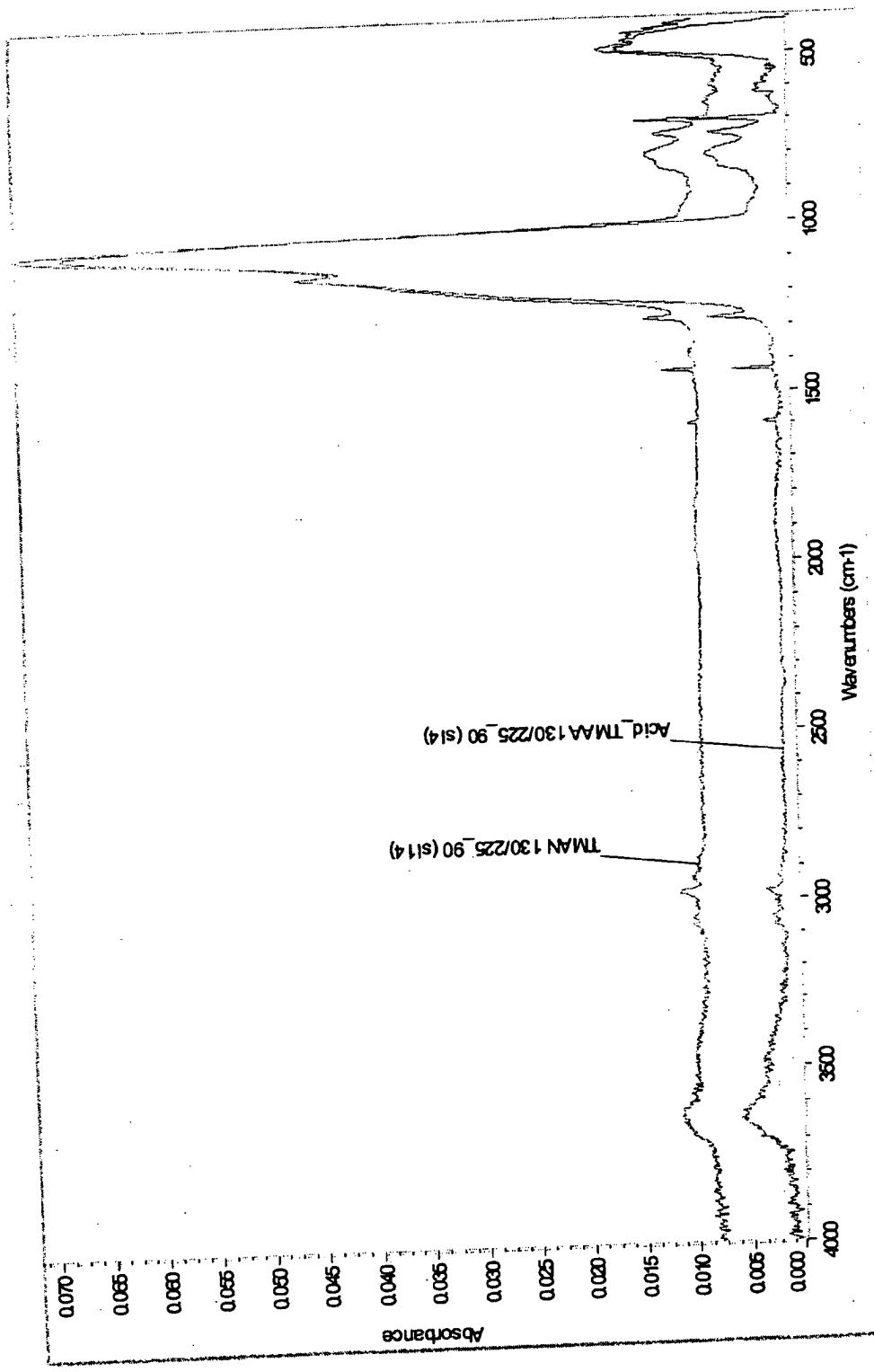


Figure 15

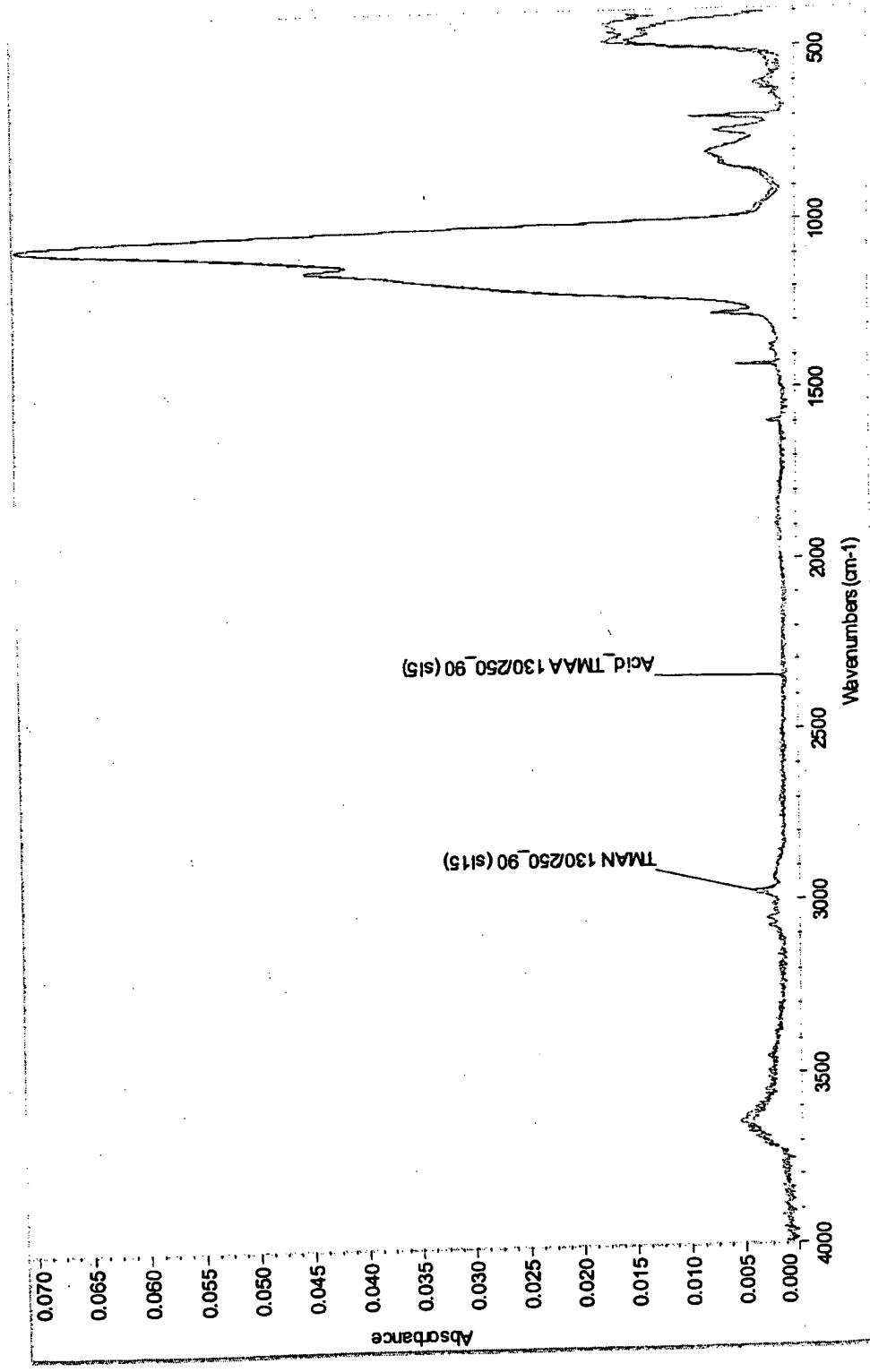


Figure 16

$^{193}\text{Arb. composition}$ Stabilized TMAA .vs. TMAN: M_w .vs. Aging

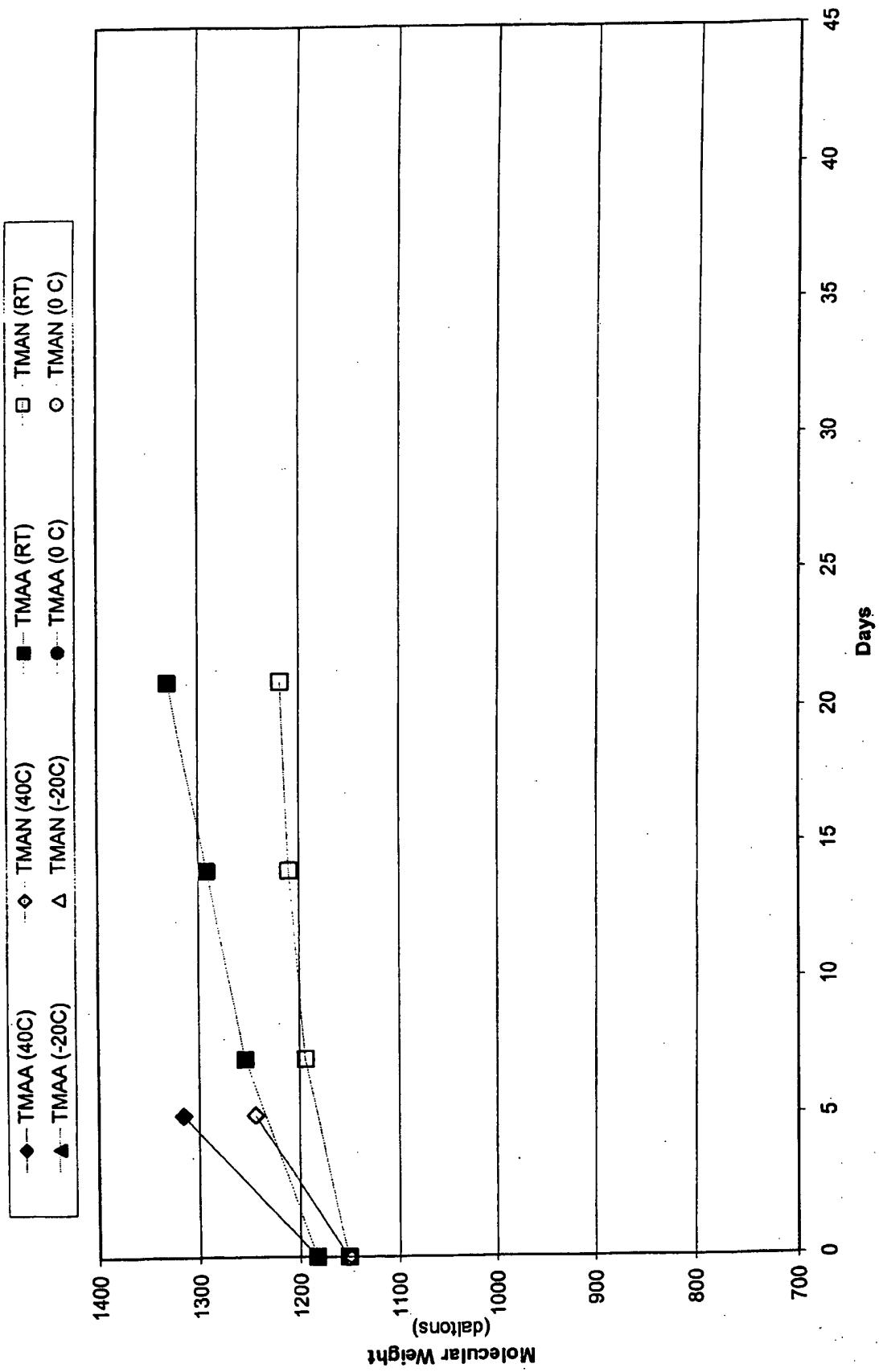


Figure 17

η_3 Absorb. Comp. Stabilized TMAA -vs- TMAN: Mn -vs- Aging

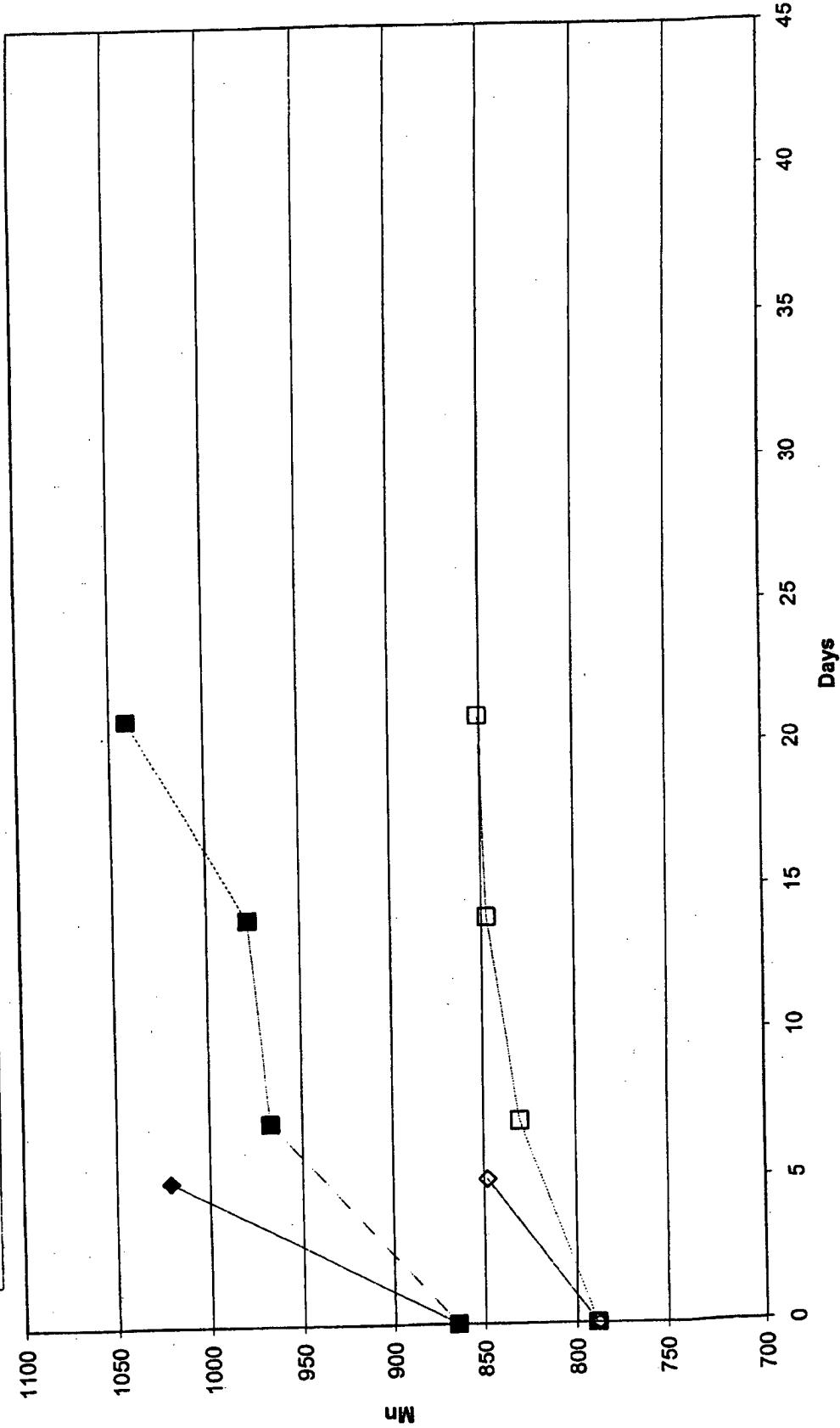
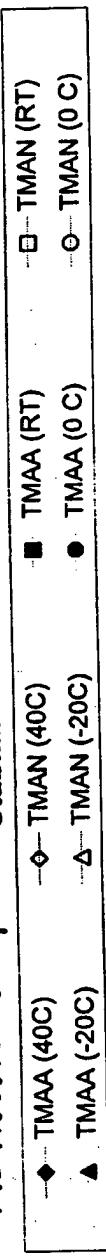


Figure 18

193 Abso. Comp.

: Stabilized TMAA -vs- TMAN: Film Thickness -vs- Aging

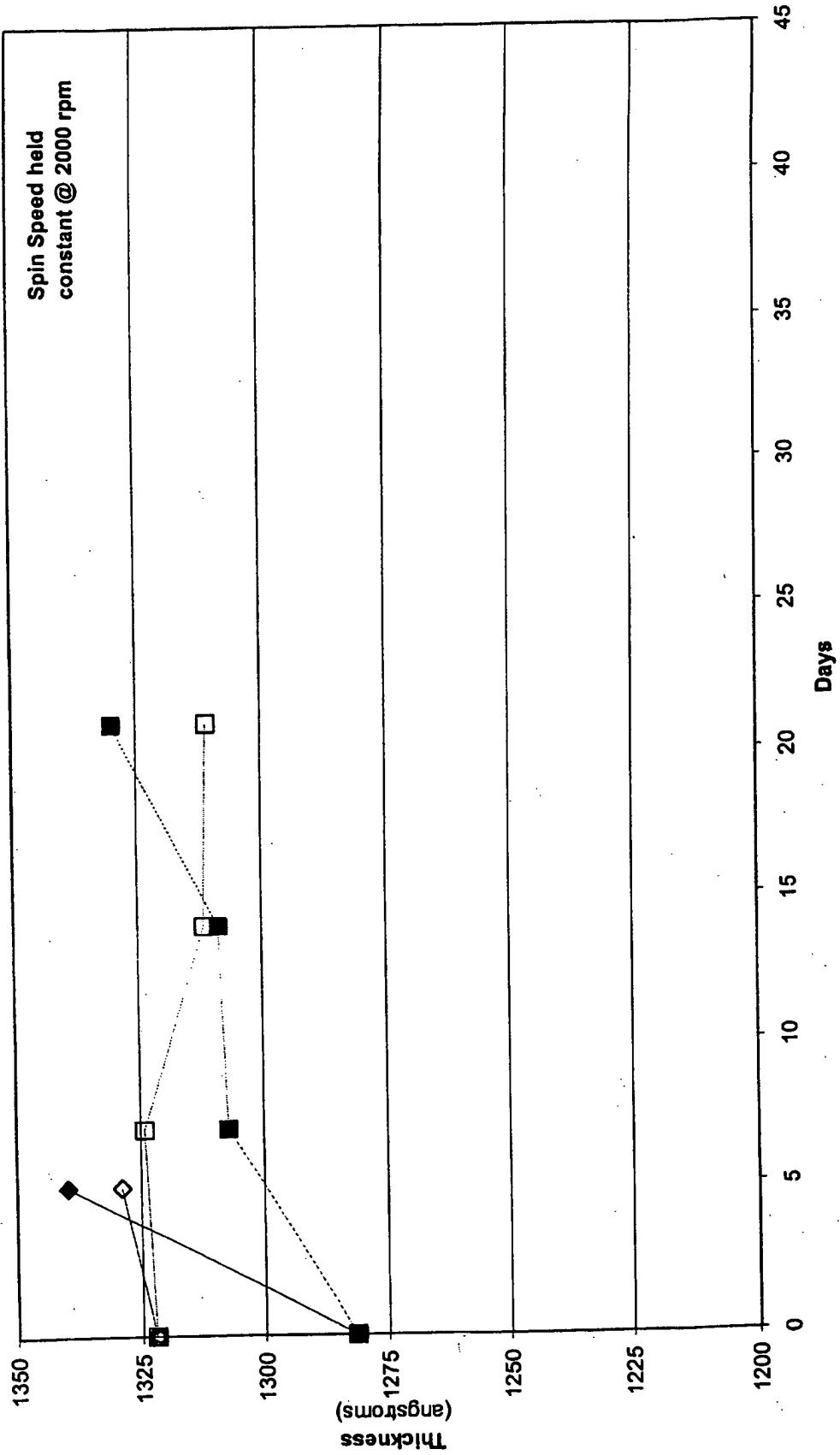


Figure 19

193 Absorb. Comp. Stabilized TMAA -vs- TMAN: Reflectance @ 193nm -vs- Aging

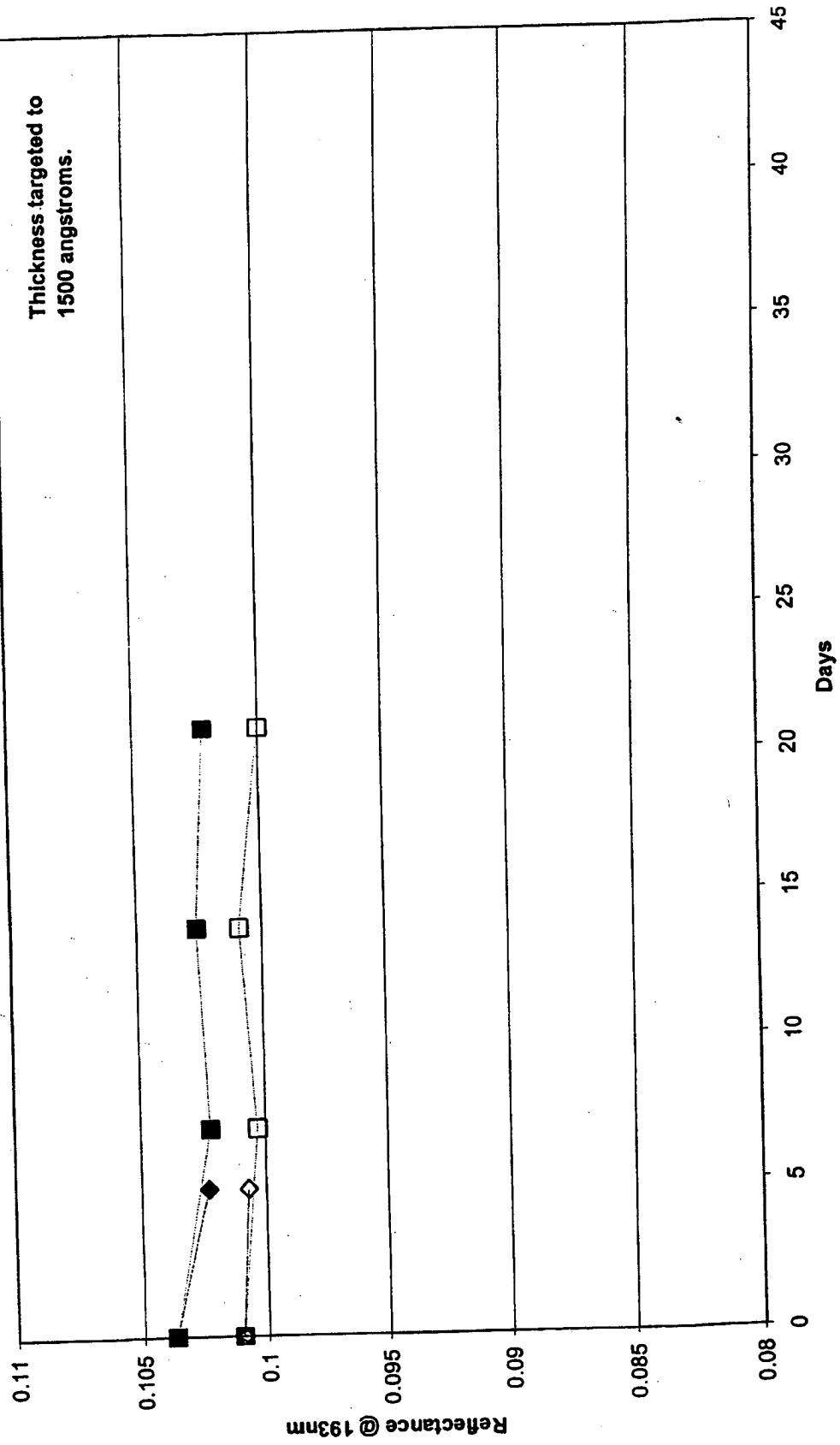
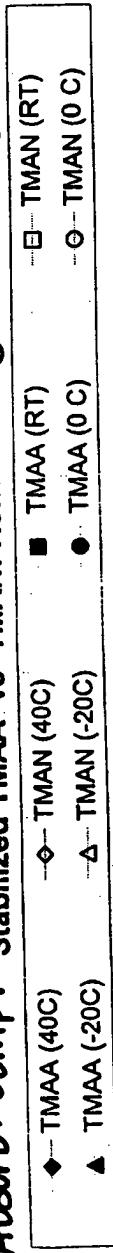


Figure 20

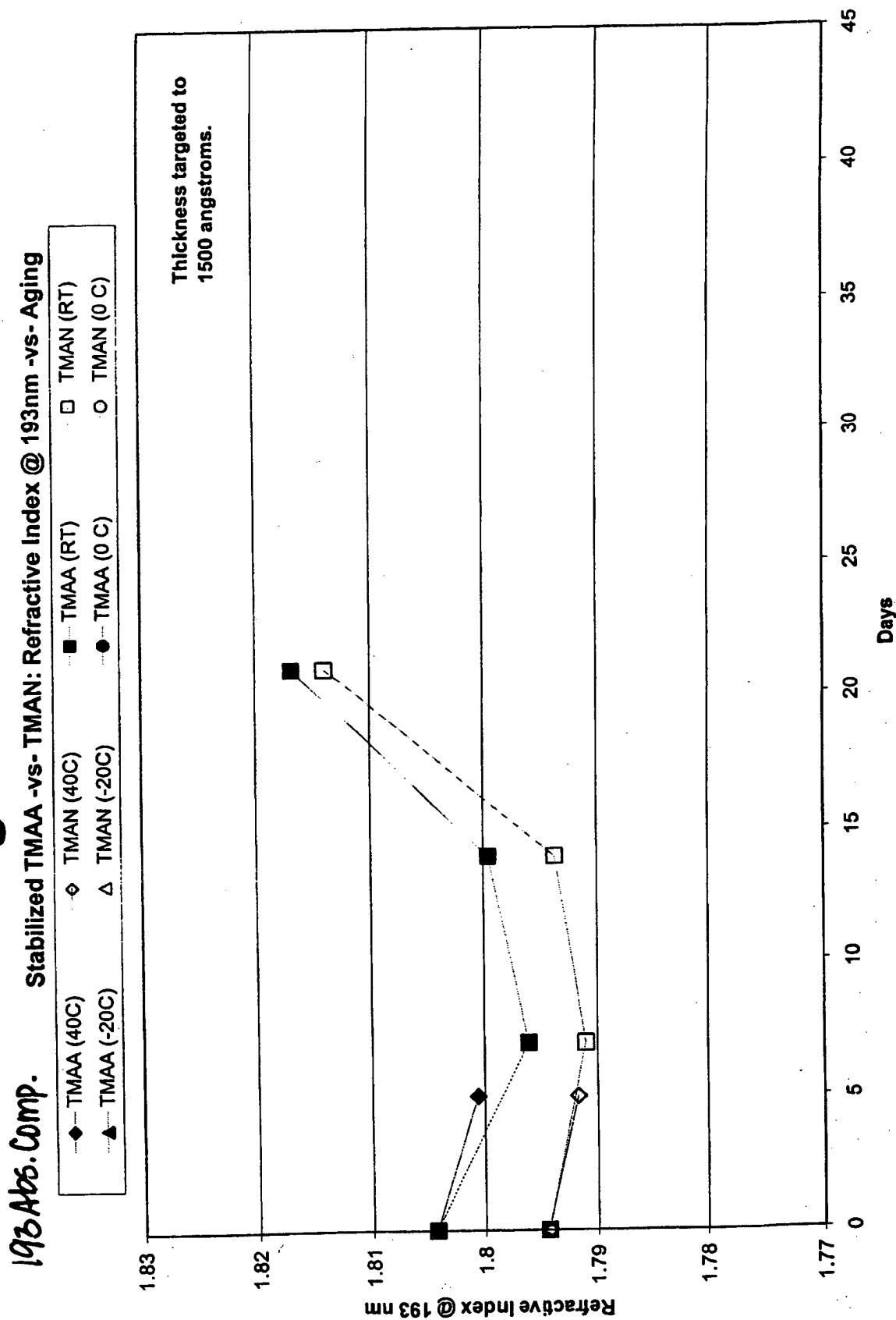


Figure 21

193 Absorb. Comp. : Stabilized TMAA -vs- TMAN: Extinction Coefficient @ 193nm -vs- Aging

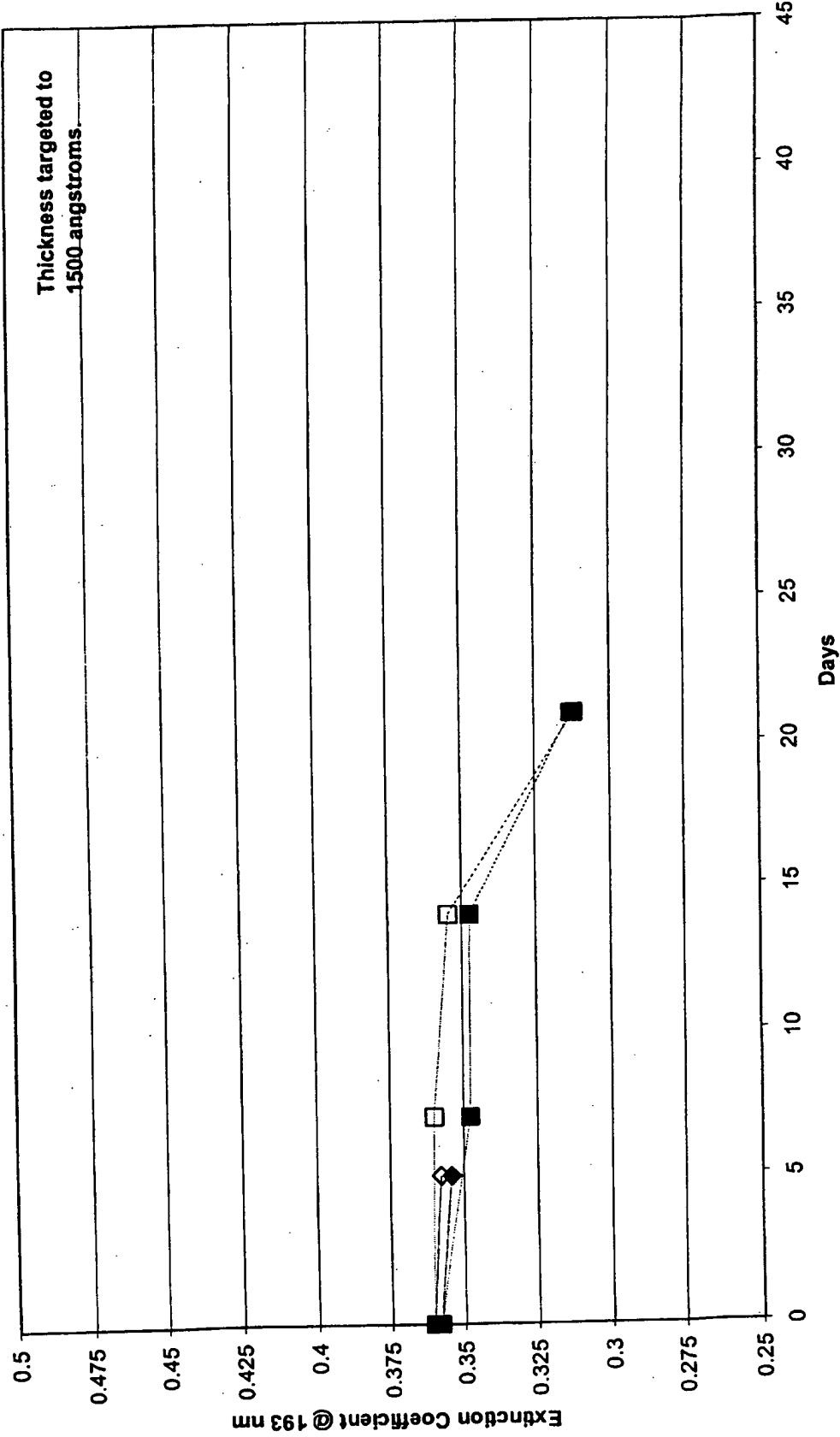
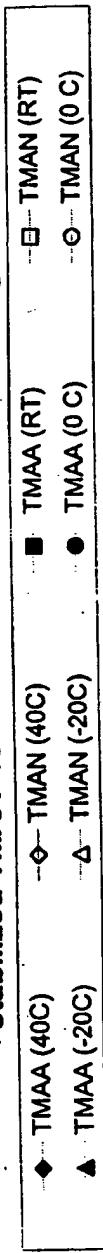


Figure 22

Obs Absorb. Comp.

Stabilized TMAA -vs- TMAN: Water Contact Angle -vs- Aging

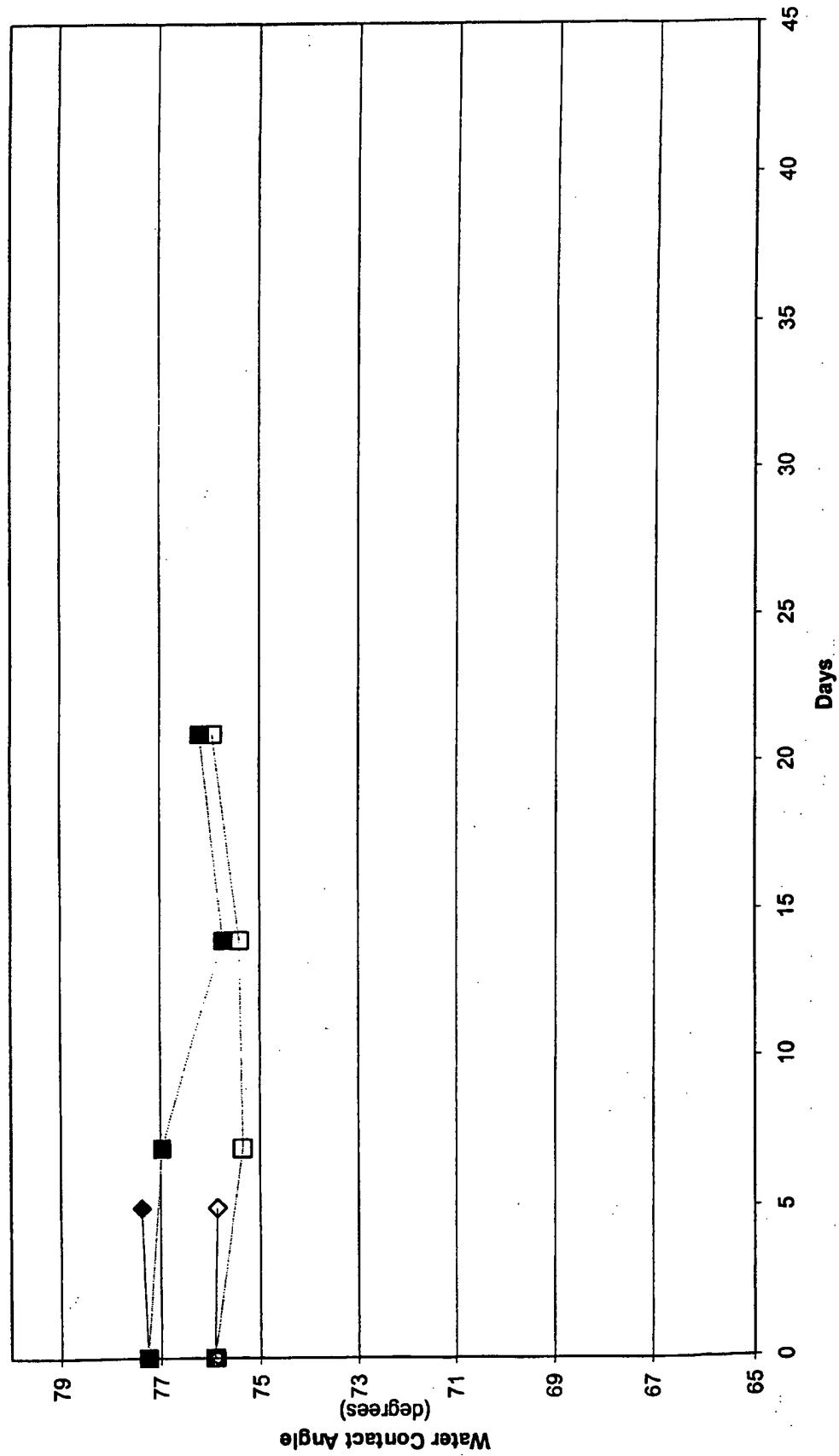
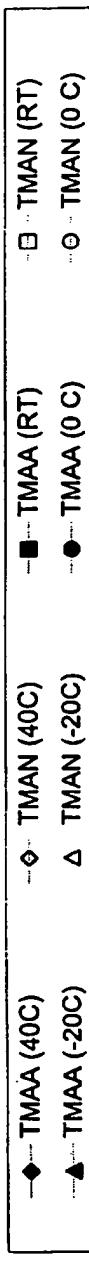


Figure 23

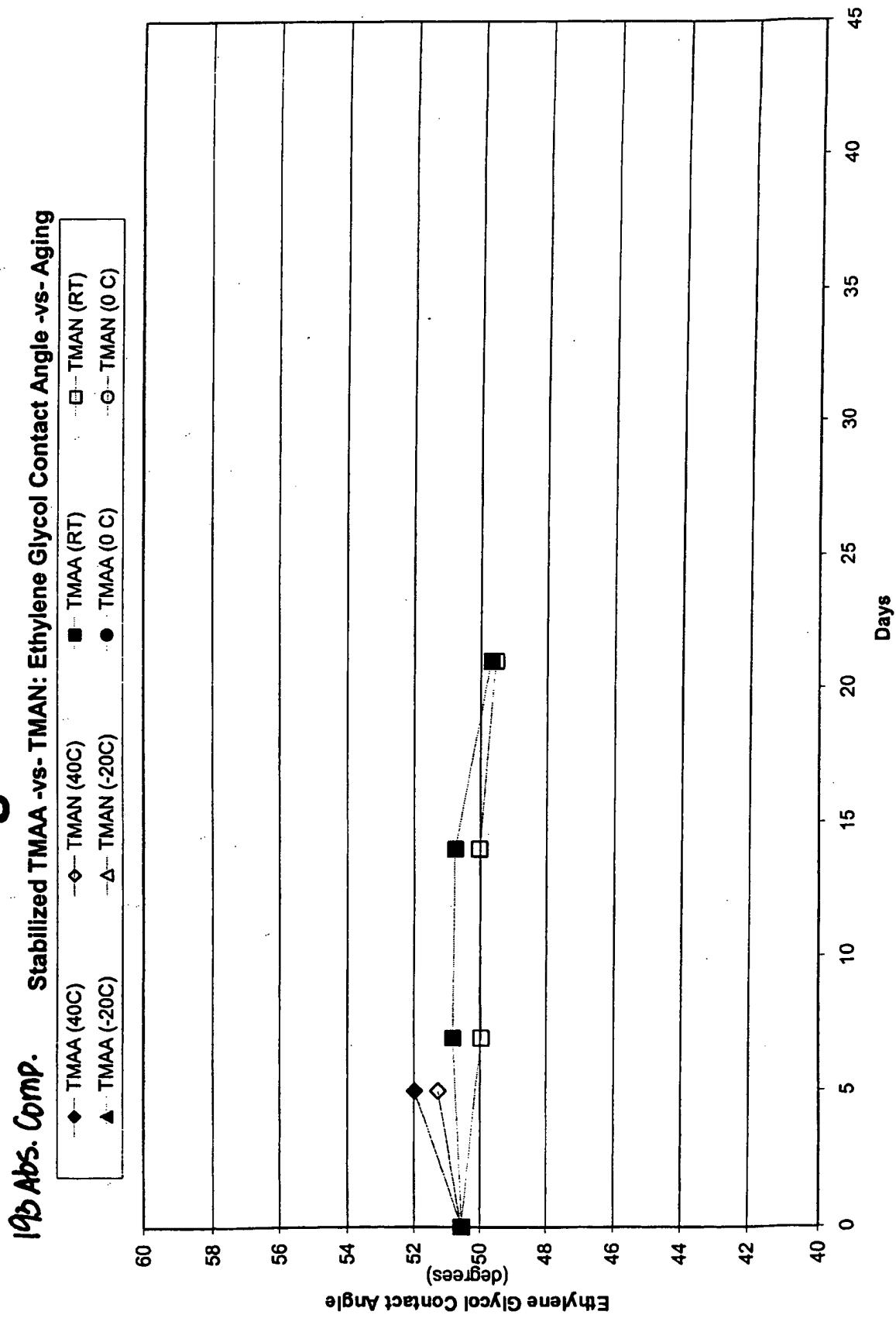


Figure 24

193 Abs. Comp. Stabilized TMAA -vs- TMAN: TMAH Resistance -vs- Aging

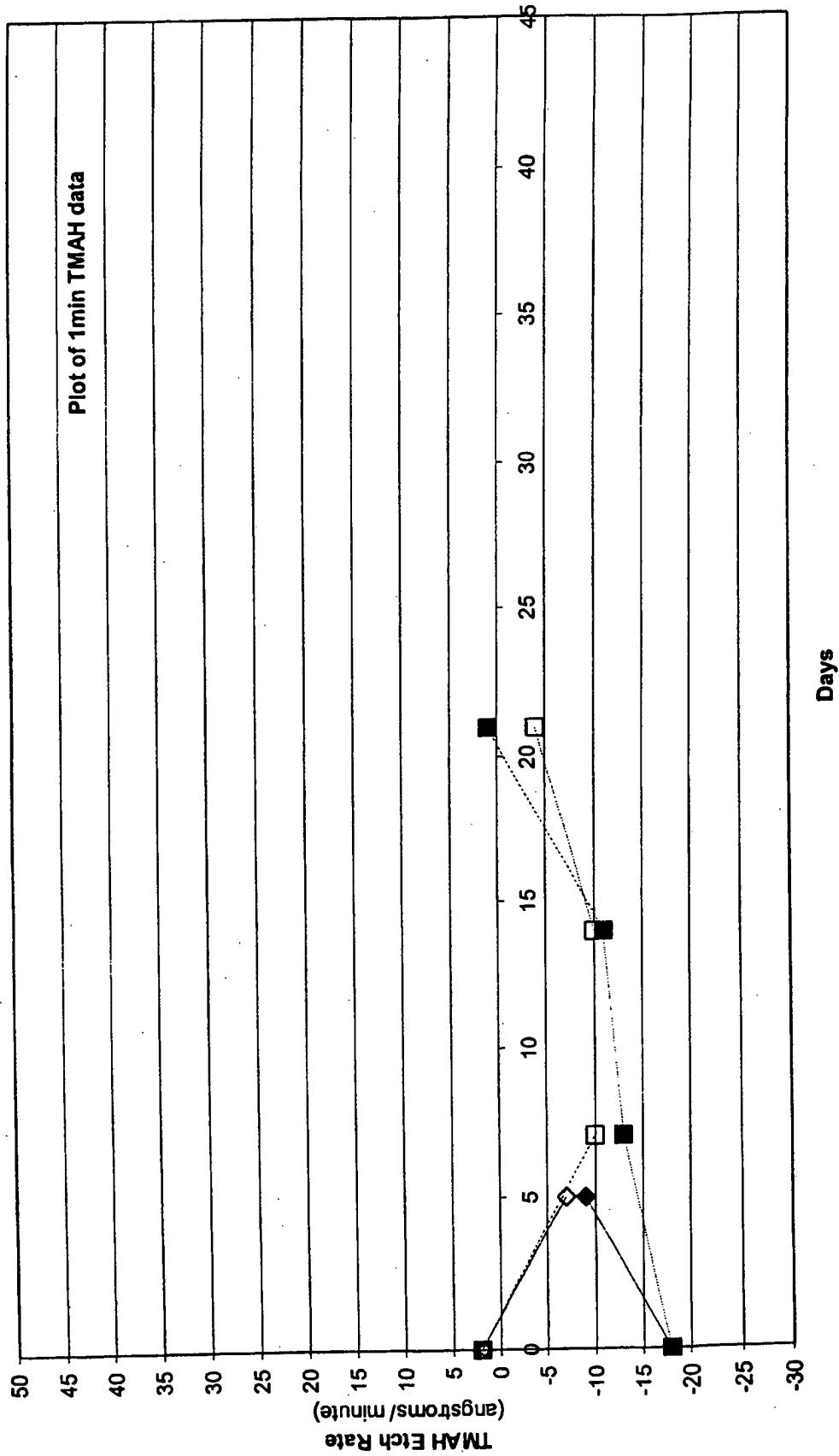


Figure 25

193 Abs. Comp. Stabilized TMAA -vs- TMAN: 500:1 BOE strip rate -vs- Aging

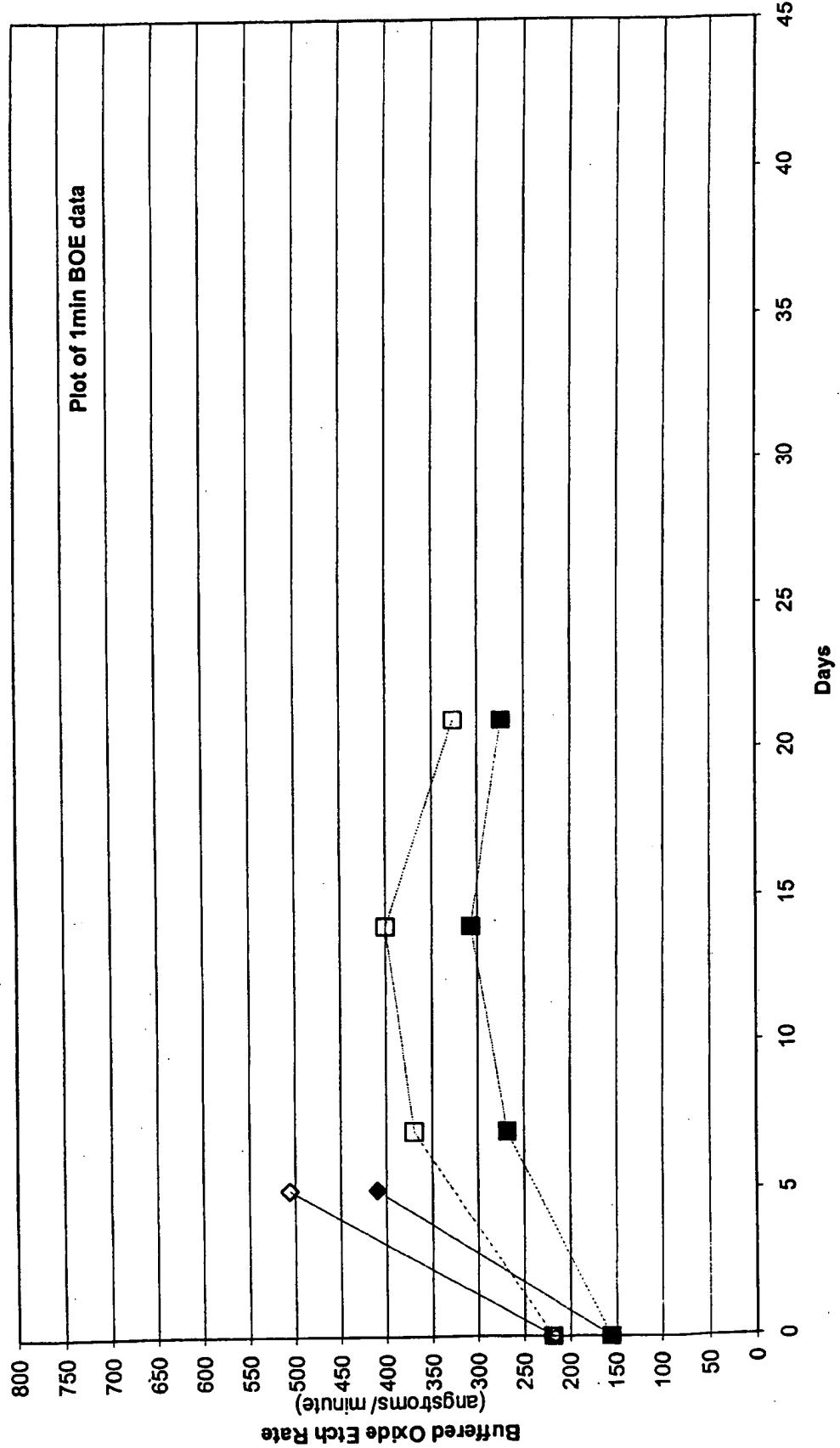
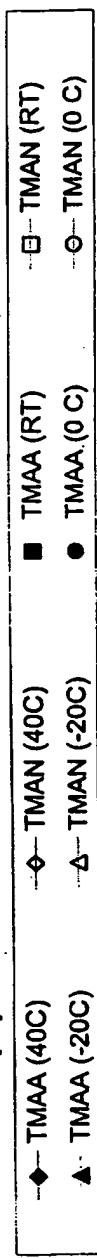


Figure 26

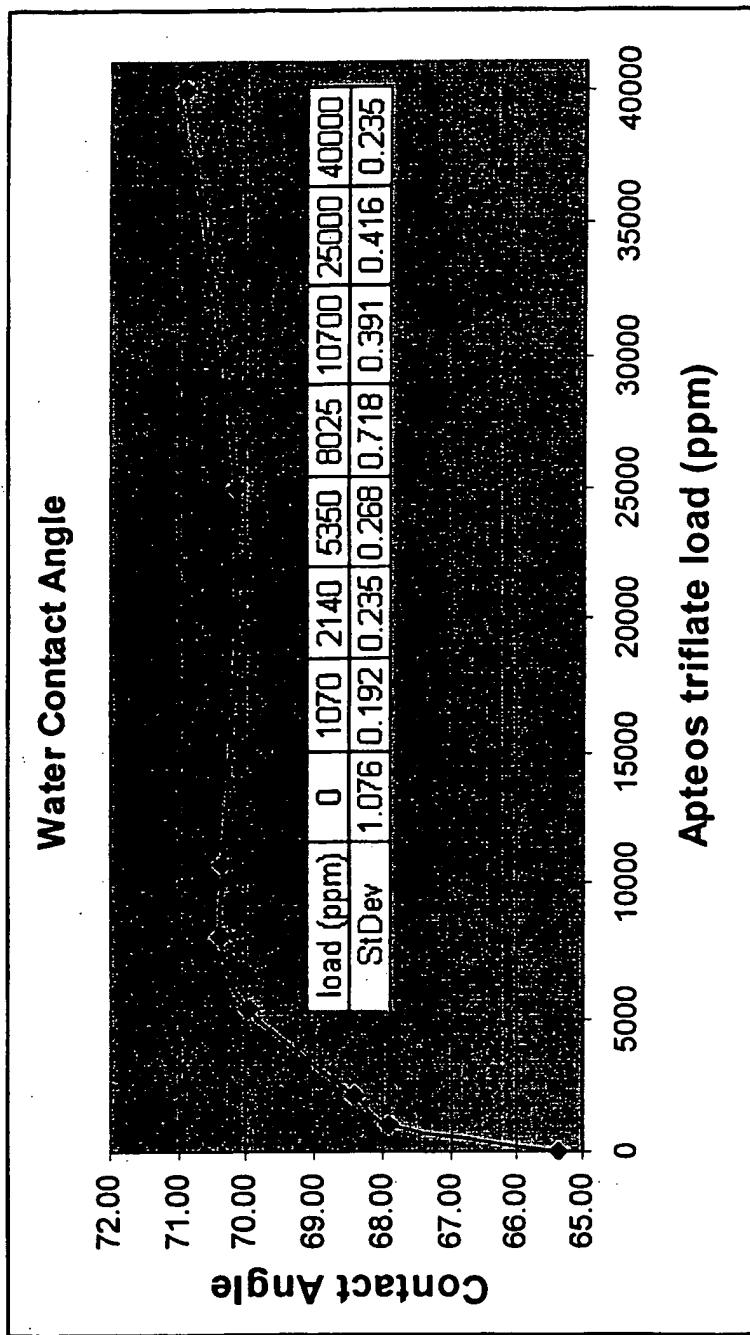


Figure 27

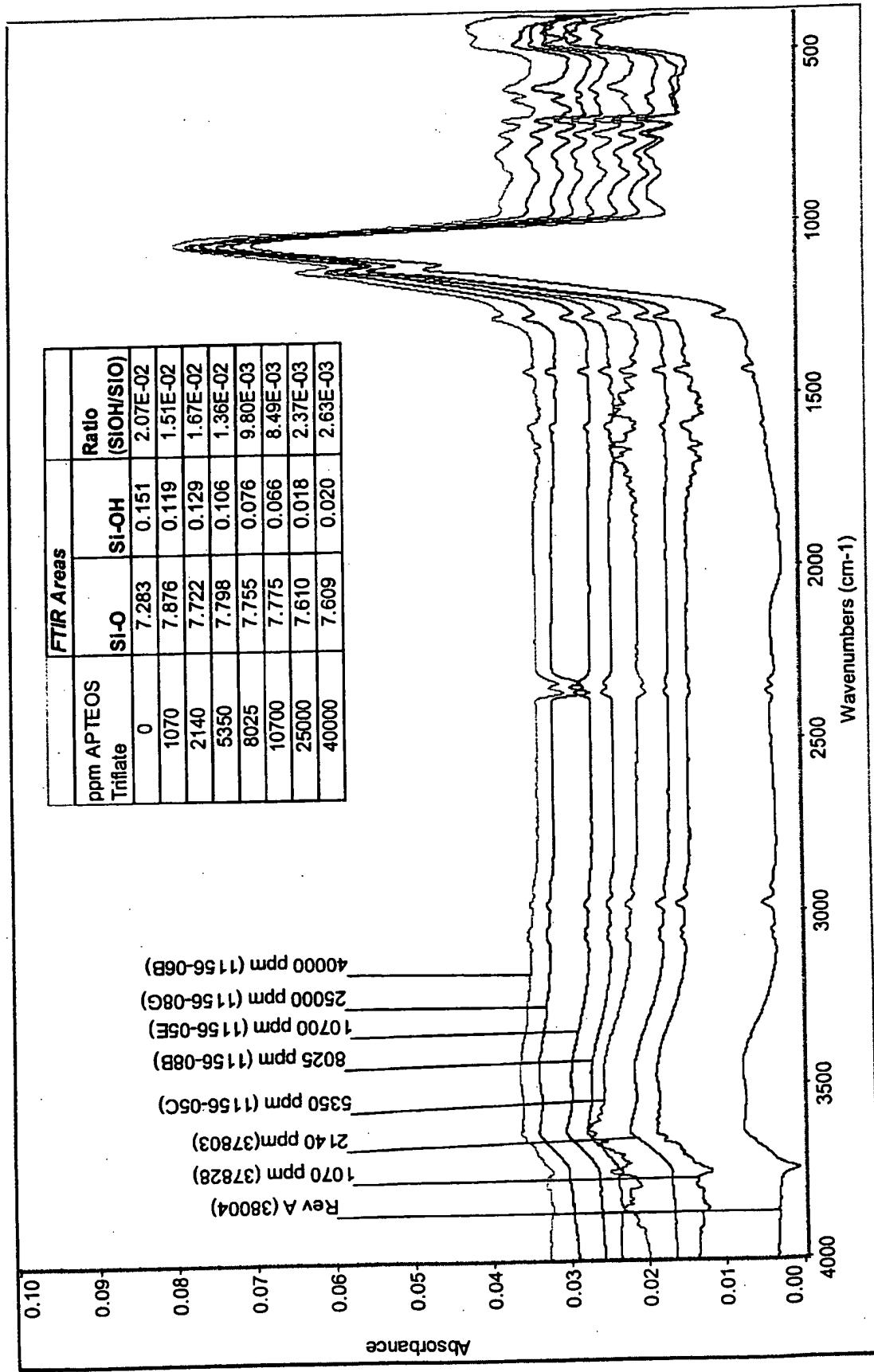


Table 3

Description	248 Absorbing Composition		193 Absorb. Comp.									
	Absorb.	Comp.	Absorb.	Comp.	Rev C	Rev C						
500:1BOE @ 21°C	130/200°C	150/250°C	130/200°C	130/240°C								
Bake Sequence	90 sec each						90 sec each					
500:1BOE @ 21°C	30 sec	1224		2012	248	133	411			962		933
	1 min	1000	550	[1568]	306	201	531	TBD		820		[1030]
	2 min	[880]					636					854
TMAH	1 min ②	Pre	ER	ER								
2.3% aq. TMAH	23°C	3529	2731	2694	2691	2695	2312	2670	2676	2699		3543
	50°C	3534	2715	2663	2660	2686	2701	2331	2653	2705		3516
	75°C	3496	2720	2702	2701	2720	2672	2323	2654	2677	2692	3588
5.0% aq. TMAH	23°C	3526	[3593]	2705	2679	2719	2693	2311	2716	2698		3553
	50°C	3487	2714	2723	2722	2702	2672	2327	2688	2673	2752	3519
	75°C	3530	2709	2726	2699	2709	2725	2361	2686	2673	2685	3503
10.0% aq. TMAH	23°C	3497	2724	2687	2702	2670	2318	2691	2672	2700		3489
	50°C	3525	2722	2670	2653	2679	2327	2693	2666	2576	2600	3483
	75°C	3519	2696	2657	2706	2709	2688	2316	2715	2653	2853	3532

Table 4

248
Absorbing
Comp.
193
Absorbing
Comp.
193 Absorb.
Comp.
193 Absorb.
Comp.
193 Absorb.
Comp.
193 Absorb.
Comp.

Description	Rev C	†1070ppm APTEOS triflate			†1070ppm APTEOS triflate			†1070ppm APTEOS triflate + 1.5% DPG		
		Pre	ER	Pre	ER	Pre	ER	Pre	ER	ER
pH	N/A	<1		<1		<1		<1		<1
Bake Sequence	130/200 C	130/160 C		130/200 C		130/240 C		130/200 C		
	50 sec			90s						
500:1	1 min @	Pre	ER	Pre	ER	Pre	ER	Pre	ER	ER
BOE	20 °C	3533		1676		2741		2737		3211
TMAH	1 min @	Pre	ER	Pre	ER	Pre	ER	Pre	ER	ER
	23 °C	3527		1690		2720		2710		3172
2.3% aq.	50 °C	3524		1676		2722		2713		3199
TMAH	76 °C	3540		1676		2743		2692		3181
	23 °C	3534		1681		2701		2722		3179
6.0% aq.	60 °C	3543		1676		2709		2717		3183
TMAH	76 °C	3527		1687		2716		2713		3166
	23 °C	3639		1690		2734		2741		3201
10.0% aq.	60 °C	3632		1682		2736		2749		3173
TMAH	76 °C	3633		1674		2701		2726		3186
	23 °C	3639		1690		2734		2716		3201
	60 °C	3632		1682		2736		2749		3173
	76 °C	3633		1674		2701		2726		3186

Table 5

193 Absorb. Comp.		193 Absorb. Comp.		193 Absorb. Comp.		193 Absorb. Comp.	
Description							
+1070ppm APTEOS triflate + 1.5%DPG	+1070ppm APTEOS triflate + 3%DPG	+1070ppm APTEOS triflate + 3%DPG	+1070ppm APTEOS triflate + 3%DPG	170ppm Ammonium Triflate	170ppm Ammonium Triflate + 3% DPG	170ppm Ammonium Triflate + 3% DPG	170ppm Ammonium Triflate + 3% DPG
pH	<1	<1	<1	<1	<1	<1	<1
Bake Sequence	130/240 C	130/200 C	130/240 C	130/200 C	130/200 C	130/200 C	130/240 C
90s							
600:1 BOE	1 min @ 20 °C	Pre	ER	Pre	ER	Pre	ER
		3214	3507	3548	3551	2751	2982
TMAH	1 min @ 23 °C	Pre	ER	Pre	ER	Pre	ER
		3218	3623	3564	2732	2951	2972
2.3% aq. TMAH	50 °C	3184	3610	3529	2746	2997	2960
		3202	3505	3519	2736	326	424
6.0% aq. TMAH	73 °C	3194	3633	3519	2744	2972	2992
		3175	3505	3479	2725	254	2952
		3166	3496	3487	2750	658	2943
10.0% aq. TMAH	76 °C	3200	3563	3496	2702	124	2953
		3176	3504	3496	2761	619	2949
		3187	3534	3500	2766	991	2992

Table 6

248 Absorb.		193 Abs.		193 Absorb.		193 Abs.		193 Abs.		193 Absorb.	
Compos.		Comp.		Comp.		Comp.		Comp.		Comp.	
Description	+1070ppm APTEOS Triflate + 0.5% DPG	+1070ppm "optimized" APTEOS Triflate + 0.25% DPG	+1070ppm "optimized" APTEOS Triflate + 0.5% DPG	+1070ppm "optimized" APTEOS Triflate + 1% DPG	+1070ppm "optimized" APTEOS Triflate + 1.5% DPG	+1070ppm "optimized" APTEOS Triflate + 2%					
pH	N/A	<1	<1	<1	<1	<2	<2	<2	<2	<2	<2
Bake Sequence	50 sec	50 sec	50 sec	50 sec	50 sec	50 sec	50 sec	50 sec	50 sec	50 sec	50 sec
600:1 BOE	1 min @ 20 °C	Pre 3487	ER 2869	Pre 3177	ER 2879	Pre 2902	ER 2907	Pre 2907	ER 2907	Pre 2947	ER 2947
TMAH	1 min @ 23 °C	Pre 3492	ER 2847	Pre 3190	ER 2854	Pre 2934	ER 2967	Pre 2967	ER 2960	Pre 2960	ER 2960
2.3% aq. TMAH	30 °C	Pre 3463	ER 2886	Pre 3190	ER 2893	Pre 2887	ER 2955	Pre 2955	ER 2958	Pre 2958	ER 2958
TMAH	76 °C	Pre 3494	ER 2875	Pre 3203	ER 2864	Pre 2885	ER 2987	Pre 2987	ER 2984	Pre 2984	ER 2984
6.0% aq. TMAH	23 °C	Pre 3496	ER 2893	Pre 3182	ER 2863	Pre 2898	ER 2927	Pre 2927	ER 3038	Pre 3038	ER 3038
TMAH	50 °C	Pre 3520	ER 2857	Pre 3189	ER 2844	Pre 279	ER 2910	Pre 2910	ER 2932	Pre 2932	ER 2932
TMAH	75 °C	Pre 3506	ER 2858	Pre 3184	ER 2860	Pre 2926	ER 2926	Pre 2926	ER 3006	Pre 3006	ER 3006
10.0% aq. TMAH	23 °C	Pre 3499	ER 2877	Pre 3187	ER 2871	Pre 2967	ER 2977	Pre 2977	ER 2992	Pre 2992	ER 2992
TMAH	50 °C	Pre 3522	ER 2848	Pre 3216	ER 2899	Pre 2906	ER 2942	Pre 2942	ER 2958	Pre 2958	ER 2958
TMAH	76 °C	Pre 3542	ER 2851	Pre 3186	ER 2885	Pre 2887	ER 2991	Pre 2991	ER 2976	Pre 2976	ER 2976

Table 7

Table 8

193 Absorb. Comp.		193 Absorb. Comp.		193 Absorb. Comp.		193 Absorb. Comp.		193 Absorb. Comp.		193 Absorb. Comp.		193 Absorb. Comp.	
Description	2140ppm "optimized" APTEOS triflate + 0.16% DPG	2140ppm "optimized" APTEOS triflate + 0.25% DPG	2140ppm "optimized" APTEOS triflate + 0.76% DPG	2140ppm "optimized" Ammonium triflate + 0.76% DPG	+ 170ppm "optimized" Ammonium triflate + 1% DPG	+ 170ppm "optimized" Ammonium triflate + 1% DPG	+ 226ppm "optimized" Ammonium triflate + 1% DPG	+ 340ppm "optimized" Ammonium triflate + 1% DPG	+ 340ppm "optimized" Ammonium triflate + 1% DPG				
Bake Sequence	130/200 C	130/200 C	130/200 C	130/200 C	90 sec	130/200 C	130/200 C						
pH	2	2	2	2	2	2	2	2	2	2	2	2	2
600.1 BOE 20 °C	1 min @ 2970	Pre ER	Pre ER	Pre ER	2933	2936	2902	2938	2938	2938	2970	2970	2970
TMAH 1 min @	2995	Pre ER	Pre ER	Pre ER	2962	2905	2913	2920	2935	2935	2949	2949	2949
2.3% aq. TMAH	2965 50 °C	248 2947	248 2947	248 2946	2929 2946	2929 2946	2929 2946	2908 2946	2932 2946	2932 2946	2951 2946	2951 2946	2951 2946
6.0% aq. TMAH	2959 50 °C	137 2942	137 2942	137 2943	2932 2943	2905 2943	2924 2943	2936 2943	2923 2943	2923 2943	2960 2943	2960 2943	2960 2943
10.0% aq. TMAH	2982 50 °C	86 2950	86 2950	86 2951	2937 2951	2915 2951	2944 2951	2919 2951	2945 2951	2945 2951	2962 2951	2962 2951	2962 2951
	3012 76 °C										2908 2951	2908 2951	2908 2951
	2966 76 °C										2937 2951	2937 2951	2937 2951

Table 9

Description	pH	193 Absorb. Comp.				193 Absorb. Comp.				193 Absorb. Comp.			
		130/200 C	130/200 C	130/200 C	130/200 C	130/200 C	130/200 C	130/200 C	130/200 C	130/200 C	130/200 C	130/200 C	130/200 C
90 sec													
		NA	2	2	2	2	2	2	2	2	2	2	2
90 sec													
500:1 BOE	1 min @ 20°C	Pre	ER	Pre	ER	Pre	ER	Pre	ER	Pre	ER	Pre	ER
TMAH	1 min @ 22°C	2887	2900	2942	2945	2974	2984	2990	2991	2994	2994	2994	2995
2.3% aq.	22°C	3564	3441	2866	2885	2921	2956	2919	2906	2984	2984	2960	2960
TMAH	50°C	3561	803	2858	106	2894	142	2933	242	166	219	219	219
	75°C	3568	102	2902	62	2925	633	2916	103	2895	893	2925	893
5.0% aq.	22°C	3568	2861	2901	201	2930	2941	2876	100	2904	37	2966	37
TMAH	50°C	3639	2848	2874	285	2902	455	2970	688	2917	410	2931	410
	75°C	3566	2893	789	2912	2941	451	2927	451	2907	138	2952	138
10.0% aq.	22°C	3563	2850	2892	107	2917	156	2956	228	2865	16	2947	16
TMAH	50°C	3580	2892	704	2870	85	2936	2977	154	2894	934	2918	934
	75°C	3546	2893	2886	2886	2914	2939	2879	2939	2939	2967	2967	2960

193
Absorb.
Composition

193
Absorb.
Composition

193
Absorb.
Composition

Descriptions	+ 1070ppm APTEOS tosylate	+ 1070ppm APTEOS tosylate	+ 1070ppm APTEOS tosylate + 5% DPG	+ 1070ppm APTEOS tosylate + 5% DPG
pH	1.5	<1	<1	<1
Bake temp. (C)/Time (Sec)	150/250C -- 50sec	130/200C -- 90sec	130/240C -- 90sec	130/240C -- 90sec
Metrics	ER (A/min)	ER (A/min)	ER (A/min)	ER (A/min)
2.5% TMAH @ 21°C	1 min 2 min	210 167	12 12	10 4
30 sec		1624	1093	2405
500:1BOE @ 21°C	1 min 2 min	1000 1880	112 >673	109 >689
				>656 >652

ER: Etch Rate (A/min);

Pre: Pre-Immersion SOG Film Average Thickness in Angstrom;

ER > 1000A/min.

ER < 1000A/min.

> Bare Si post-etch.

[] Post-etch film is highly non-uniformed.

Table 10

248 Absorb. Composition

193 Absorb. Compos.

193 Absorb. Composition

Descriptions		383ppm TMAH triflate	383ppm TMAH tosylate
pH	N/A	<1	<1
Bake temp. (C)/Time (Sec)	130/200C -- 50sec	130/240C -- 90sec	130/240C -- 90sec
Metrics	ER (A/min)	ER (A/min)	ER (A/min)
2.5% TMAH @ 21°C	1 min 2 min	210 167	11 4
500:1BOE @ 21°C	30 sec 1 min 2 min	1224 1000 [880]	969 844 [854]
			689 647 665
			16 8 11

ER: Etch Rate (A/min);
 Pre: Pre-Immersion SOG Film Average Thickness in Angstrom;
 ER > 1000A/min.
 ER < 1000A/min.
 > Bare Si post-etch.
 [] Post-etch film is highly non-uniformed.

Table II

Table 12

	"N" wt / Si comp. Wt (ppm)	"N" mole / Si comp. Wt (ppm)	"N" mole / Si comp. Wt (ppm) (consider 95% TMAA and 96% TMAN)
AS TMAA	589	4.422	4.201
TMAN	601.2	4.416	4.239

Table 13

193 Absorbing Composition + TMAA

Bake temp. (C)/Time (Sec)	130/160C -- 90sec	130/175C -- 90sec	130/200C -- 90sec	130/225C -- 90sec	130/250C -- 90sec	130/260C -- 90sec
Metrics	ER (A/min)					
2.5% TMAH @ 21°C	1 min	.1	5	.7	.2	.3
PGMEA @ 21°C	6 min	.04	.06	.04	.02	.09
500:1BOE @ 21°C	30 sec	.353	.251	.246	.165	.176
	1 min	.631	.271	.216	.131	.141

193 Absorbing Comp. + TMAN

Bake temp. (C)/Time (Sec)	130/160C -- 90sec	130/175C -- 90sec	130/200C -- 90sec	130/225C -- 90sec	130/250C -- 90sec	130/260C -- 90sec
Metrics	ER (A/min)					
2.5% TMAH @ 21°C	1 min	1	3	1	3	3.2
PGMEA @ 21°C	6 min	.07	.02	.07	.01	.01
500:1BOE @ 21°C	30 sec	.57	.19	.19	.14	.21
	1 min	.56	.19	.19	.14	.14

Spin Coated @ 7PM on 5/22/03; Wet Process

2A-B
Absorb. Comp.

Table 14

193 Absorbing composition 248 Abs. Comp.

Descriptions		+ 600 ppm TMAH		+ 600 ppm Stabilized TMAH	
PH	1.7		0.5		N/A
Bake temp. (C)/Time (Sec)	130/240C ... 90sec		130/240C ... 90sec		130/200C ... 50sec
DIWater Contact Angle	78.7		78.9		74.9
Metrics		ER (A/m ln)		ER (A/m ln)	
2.5% TMAH @ 21°C	1 m ln 2 m ln 30 sec	-7 -8 263	-9 -10 277	-9 -10 277	45 47 795
500:1BOE @ 21°C	1 m ln 2 m ln	506 413	410 369	410 369	937 720
DIWater Contact Angle		77.5		78	74.2
Metrics		ER (A/m ln)		ER (A/m ln)	
2.5% TMAH @ 21°C	1 m ln 2 m ln 30 sec	-10 -8 230	-13 -1 174	-13 -1 174	12 30 715
500:1BOE @ 21°C	1 m ln 2 m ln	370 370	268 230	268 230	798 670
DIWater Contact Angle		79.2		77.2	72
Metrics		ER (A/m ln)		ER (A/m ln)	
2.5% TMAH @ 21°C	1 m ln 2 m ln 30 sec	-10 -8 223	-11 -7 216	-11 -7 216	24 40 931
500:1BOE @ 21°C	1 m ln 2 m ln	400 405	307 313	307 313	964 [720]
DIWater Contact Angle		77.5		78.3	70
Metrics		ER (A/m ln)		ER (A/m ln)	
2.5% TMAH @ 21°C	1 m ln 2 m ln 30 sec	-4 -6 288	-1 -1 256	-1 -1 256	96 939
500:1BOE @ 21°C	1 m ln 2 m ln	328 [351]	274 [319]	274 [319]	912 [722]

Table 15

248 Abs. Comp 193 Absorbing composition

Descriptions		+ 600 ppm Stabilized TMAA		+ 600 ppm TMAA	
Bake temp. (C)		130/200C		130/240C	
DIWater Contact Angle		ER (A/m/in)		ER (A/m/in)	
Metrics	ER (A/m/in)	ER (A/m/in)	ER (A/m/in)	ER (A/m/in)	ER (A/m/in)
2.5% TMAH @ 21°C	1 min	67	-3	5	
	2 min	62	-2	8	
	30 sec	815	158	219	
500:1BOE @ 21°C	1 min	618	171	252	
	2 min	621	173	312	
NE-14 @ 21°C	30 sec				
	1 min				
DIWater Contact Angle		ER (A/m/in)		ER (A/m/in)	
Metrics	ER (A/m/in)	ER (A/m/in)	ER (A/m/in)	ER (A/m/in)	ER (A/m/in)
2.5% TMAH @ 21°C	1 min	31	-2	6	
	2 min	49	-2	4	
	30 sec	753	154	195	
500:1BOE @ 21°C	1 min	736	181	303	
	2 min	[605]	188	320	
NE-14 @ 21°C	30 sec				
	1 min				
DIWater Contact Angle		ER (A/m/in)		ER (A/m/in)	
Metrics	ER (A/m/in)	ER (A/m/in)	ER (A/m/in)	ER (A/m/in)	ER (A/m/in)
2.5% TMAH @ 21°C	1 min	74	-8	2	
	2 min	80	2	1	
	30 sec	839	165	234	
500:1BOE @ 21°C	1 min	742	188	282	
	2 min	655	188	315	
NE-14 @ 21°C	30 sec				
	1 min				

Table 16

248
Absorb. Comp.
193 Absorb. Composition

Descriptions	+ 600 ppm Stabilized TMAA		+ 600 ppm TMA
	Bake temp. (C)	130/240C	
DiWater Contact Angle	130/240C		
Metrics	ER (A/min)	ER (A/min)	ER (A/min)
2.5% TMAH @ 21°C	1 min	53	2
	2 min	56	1
	30 sec	700	173
500:1BOE @ 21°C	1 min	688	156
	2 min	601	168
NE-14 @ 21°C	30 sec	742	168
	1 min	2825	286

Table 17

248 | 193 Absorbing Composition

+ 1079988 "optimized" APTEOS Triflate

Table 18

248 AC
✓

193 Absorbing Composition

Description		Rev A + 1070ppm "optimized" APTEOS Triflate + 1.5% DPG					
pH	N/A	<2	<2	<2	<2	<2	<2
Bake Sequence		50 sec			90 sec		
500:1	1 min @ 20°C	ER	ER	ER	ER	ER	ER
TMAH	1 min @ 23°C	393	386	163	129	590	538
2.5% aq. TMAH	50°C	1594	959	400	275	900	856
5.0% aq. TMAH	23°C	818	710	341	241	745	683
10.0% aq. TMAH	50°C	959	400	275	161	833	777
	75°C	207	105	48	28	161	149

Table 19

248
AC 193 Absorbing composition

193 Absorbing Composition							
+ 1070ppm "optimized" APTEOS MSA + 1.5% DPG							
Description	248.2100.2000m	Rev A	Rev B				
pH	N/A	1.5	<2	<2	<2	<2	<2
Bake Sequence	130/200°C	130/180°C	130/200°C	130/220°C	130/240°C	130/250°C	130/280°C
500:1 BOE	50 sec	90 sec	90 sec	90 sec	90 sec	90 sec	90 sec
TMAH	1 min @ 20°C	ER	ER	ER	ER	ER	ER
2.3% aq. TMAH	23°C	780	100	21	507	518	229
5.0% aq. TMAH	50°C	162	781	144	201	201	226
10.0% aq. TMAH	73°C	1986	613	686	372	466	383

Table 20

Materials	pH	Days at 40C	Mn	Mw	Mp	Mz	Mz+1	PDI
Rev A + 1070 ppm "opt" apteos triflate	1.732	0	780	1109	735	1488	1844	1.422
Rev A + 1070 ppm "opt" apteos triflate + 1.5% DPG	<2	7	1062	1568	1329	2188	2853	1.476
Rev A + 1070 ppm apteos msa + 1.5% DPG	<2	7	891	1269	754	1722	2179	1.424
			880	1486	1198	1995	2520	1.404
			1006	1241	749	1680	2127	1.41
			1410	1175	1887	2364	1.402	

193 Absorb. Comp.

5 days at 40C 193AC	Mn	Mw	110 nm via fill
pH 1.5 + 2000 ppm nitric acid acidified TMAC	1289	1641	No voiding

Table 21

248
AC

193 Absorbing Composition (AC)

Table 22

193 Absorbing Comp.

Description	Thickness	1 dev	Reflectance @ 193nm	n @ 193nm	k @ 193nm
193 Rev A	1469	12.2	9.77	1.8027	0.3811
193 Rev A + 1070 ppm APTEOS Triflate	1502	15.4	10.26	1.8019	0.3469
193 Rev A + 2140 ppm APTEOS Triflate	1514	12.1	10.33	1.7945	0.3304
193 Rev A + 5350 ppm APTEOS Triflate	1509	15.4	10.18	1.7931	0.3362
193 Rev A + 8025 ppm APTEOS Triflate	1512	9.7	10.19	1.7918	0.3329
193 Rev A + 10700 ppm APTEOS Triflate	1506	12.7	10.15	1.7958	0.3427
193 Rev A + 25000 ppm APTEOS Triflate	1500	12.2	10.14	1.7998	0.3526
193 Rev A + 40000 ppm APTEOS Triflate	1533	10.5	10.16	1.7793	0.3276

Table 23

ppm APTEOS Triflate	40C Aging	Mn	Mw	M _p	M _z	M _{z+1}	Polydispersity
193 + 1070 ppm APTEOS Triflate	0	920	1283	759	1724	2173	1.395362
	5	1279	1681	1405	2174	2706	1.314284
193 + 2140 ppm APTEOS Triflate	0	754	1119	744	1562	2000	1.483957
	5	955	1378	788	1897	2455	1.442483
193 + 5350 ppm APTEOS Triflate	0	876	1226	754	1640	2046	1.39940
	5	984	1367	779	1819	2268	1.38917
193 + 8025 ppm APTEOS Triflate	0	877	1228	754	1646	2058	1.40051
	5	988	1369	1112	1812	2247	1.38518
193 + 10700 ppm APTEOS Triflate	0	875	1226	755	1642	2052	1.40143
	5	1001	1396	1156	1860	2320	1.39492
193 + 25000 ppm APTEOS Triflate	0	846	1204	764	1635	2060	1.42421
	5						
193 + 40000 ppm APTEOS Triflate	0	835	1169	755	1558	1930	1.39928
	5	846	1260	773	1726	2168	1.489298

193 Absorb. Comp.

Table 24

248 AC 193 Absorbing Composition

Description		248/2100,200mm	Rev A	Rev A + 10,700 ppm APTEOS Triflate (10X)	Rev A + 40,000 ppm APTEOS Triflate (37X)
pH		N/A		< 2.5	< 2.5
Bake		130/200 C	130/200 C	130/240 C	
Sequence		50 sec N2	90 sec N2	90 sec N2	
500:1	1 min @	ER	ER	ER	ER
BOE	20°C				
TMAH	1 min @				
2.5% aq. TMAH	23°C	45	45	45	45
5.0% aq. TMAH	23°C	287	287	298	309
10.0% aq. TMAH	23°C	121	121	166	176
	50°C	121	121	116	162
	75°C	145	145	145	878

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